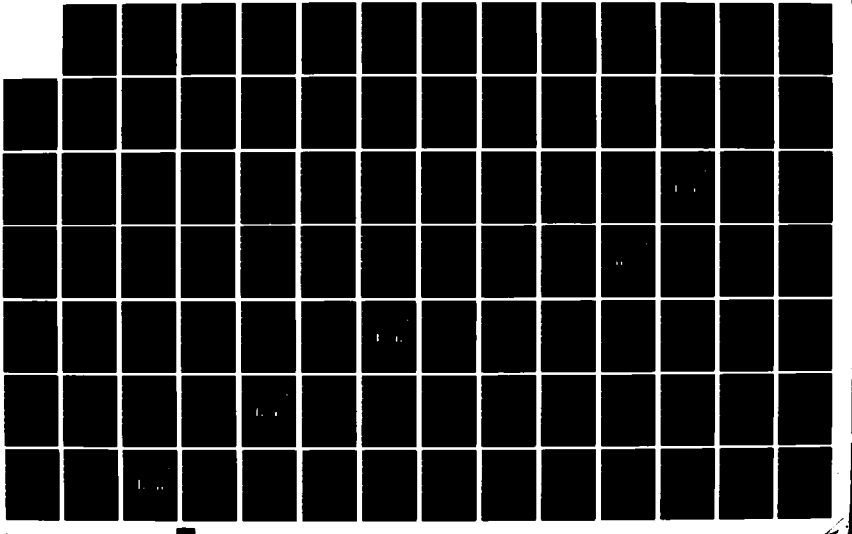
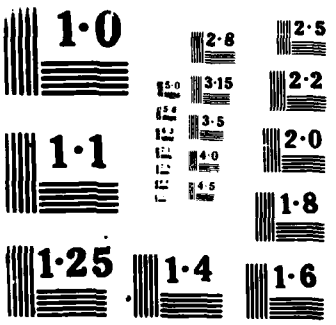
AD-A168 556 TECHNICAL SKILL TRAINING IN THE ARMY RESERVE COMPONENTS 1/2
(U) LOGISTICS MANAGEMENT INST BETHESDA MD
E D SIMMS ET AL. SEP 84 LMI-RA401-1 MDA903-81-C-00166
UNCLASSIFIED F/G 15/5 NL





(12)

TECHNICAL SKILL TRAINING IN THE ARMY RESERVE COMPONENTS

Working Note RA401-1

September 1984

Edward D. Simms, Jr.
Dayton S. Pickett

Prepared pursuant to Department of Defense Contract No. MDA903-81-C-0166 (Task RA401). Views or conclusions contained in this document should not be interpreted as representing official opinion or policy of the Department of Defense. Except for use for Government purposes, permission to quote from or reproduce portions of this document must be obtained from the Logistics Management Institute.

LOGISTICS MANAGEMENT INSTITUTE
6400 Goldsboro Road
Bethesda, Maryland 20817-5886

PREFACE

This working note describes the current training strategies designed to build and sustain competence in certain essential technical logistics skills in the Army National Guard and Army Reserve. It concentrates on Military Occupation Specialties (MOSs) important to the mission accomplishment of nondivisional logistics support units. Our earlier work described these units in the Reserve Component as being critical to the conduct of any operation by the United States Army, regardless of size of the committed combat force. Thus, these Reserve Component skills are essential to the tactical employment of the U.S. Army -- both Active and Reserve Components.

We invite comment and corrections to the factual content of the working note. Future working notes will present similar data for the Air Force, Navy and Marine Corps.

TABLE OF CONTENTS

1. INTRODUCTION

This working note describes the current Army system designed to build and sustain technical logistics skills in the Army National Guard (ARNG) and the United States Army Reserve (USAR). Our earlier efforts found that Reserve Component nondivisional logistics units in the corps rear area and the communications zone are critical to all operations involving Army combat forces.[1] Of the Army nondivisional supply, maintenance, and transportation units deploying in the early days of a European war, over 80 percent are Reserve Component units. The purpose of this current review is to determine whether the policies and programs which support technical skill training for the Reserve Components are suitable and adequate.

We address only the programs dealing with the development and sustainment of certain essential technical logistics skills of enlisted personnel, rather than the training programs for general management/supervisory skills or unit collective proficiency. Additionally, we concentrate on programs for those members of the Selected Reserve assigned to Table of Organization and Equipment (TOE) units providing traditional logistics support (i.e., supply, maintenance and transportation) to combat divisions.

In order to understand fully the requirements for individual training programs, we analyze first the role and responsibilities of enlisted Reserve Component logistics specialists in the Selected Reserve of the Total Force. We examine the probable wartime jobs of these soldiers, looking not only at the documented duties associated with each MOS but also at the wartime missions of the military units that include these MOSs. Second, we review the

---

[1] Edward D. Simms, et al., "Reserve Component Logistics Responsibilities in the Total Force," ML206, Logistics Management Institute, October 1982.

statistical characteristics (attributes of experience) of the population of guardsmen and reservists who currently occupy these positions to understand "whom" the Army is training. Third, we analyze the overall training strategy[2] and specific training programs now conducted to prepare Reserve Component logistics specialists to perform their wartime tasks. These analyses are presented in the following sections, and the specific details for each MOS in our sample are presented separately in summary sheets in Appendices A through G.

[2]A training strategy in this context is the overall approach that governs the training of interest including the plans, procedures, and policies.

2. THE JOB

BACKGROUND

Skill Level, Grade, and Title

Throughout this report, and in preparation for future efforts dealing with other military services, the terms "junior apprentice, senior apprentice, journeyman, master, supervisor/manager" are used as titles to represent a logical progression in skill level within each military job or specialty. The Army recognizes this same progression by means of different enlisted grades and a numerically designated skill level (SL) as follows:

- junior apprentice: E3, SL1;[1]
- senior apprentice: E4, SL1;[1]
- journeyman: E5, SL2;
- master: E6, SL3;
- supervisor/manager: E7 and above, SL4 (not considered further in this report).

Skill Range

Each of the terms (junior apprentice, senior apprentice, journeyman, master) denotes a requirement or a level of proficiency and a range of skills/tasks over which that proficiency must be achieved and maintained. In general, higher skilled jobs require higher proficiency levels over a broader range of tasks than lower skilled jobs in the same MOS.

---

[1]Army Regulation (AR) 611-201 identifies SL1 soldiers as those assigned grades of E3 and E4 without differentiating between those with "junior" or "senior" SL1 proficiency. That differentiation is ours and is based on reviews of task lists, manning tables, and assignment policies. We believe the distinction is helpful in discussing career and proficiency progression in this report.

Junior apprentices are soldiers who have successfully completed initial entry training for their MOS but have little or no job/unit experience. They require direct technical supervision on most tasks and cannot work independently.

Senior apprentices are soldiers who have successfully completed initial entry training and have significant job experience in their MOS. Using technical documentation and job aids, they can perform most basic job requirements of the MOS unsupervised.[2]

Journeymen have achieved a level of skill that enables them to perform normal technical tasks routinely. They operate without supervision and are expected to accomplish most recurring tasks. Additionally, they can guide the work of apprentices at the job site.

Masters have attained an advanced level of skill. They can accomplish all routine tasks and have the skills and knowledge to accomplish unexpected tasks. They have both extensive technical knowledge and extended job experience. They are able to organize the job site and give technical oversight to others. If an MOS merges with other military jobs, it often occurs at the master's level.

MOS DESCRIPTION

In order to assess the Army training strategy, we selected seven MOSs to analyze in detail. These MOSs were chosen because (1) a high level of skill is required, (2) a high level of wartime criticality is associated with the specialty, or (3) one or more features of the training requirement or

[2]The Army regulation governing Enlisted Career Management Fields and Military Occupation Specialties (AR 611-201) reinforces this distinction between junior and senior apprentices. Only E4 apprentices are assigned to TOE positions calling for single, one-of-a-kind specialists in a unit, implying that senior apprentices are capable of independent, unsupervised job performance, while the junior apprentice, fresh from the training base, requires direct supervision.

environment make training especially difficult. The MOSs examined are shown in Table 2-1.

TABLE 2-1. ARMY SPECIALTIES SELECTED FOR STUDY

MOS	TITLE	JOB DESCRIPTION
44E	Machinist	Makes, repairs, and modifies parts using a variety of hand and machine tools. Parts usually are metal but may be other material.
45G	Fire Control Systems Repairer	Maintains and repairs a variety of state-of-the-art fire control equipment and devices, most of which are mounted in combat vehicles.
61B	Watercraft Operator	Operates watercraft and amphibians and performs deck duties on these craft.
63H	Track Vehicle Repairer	Repairs engines, power trains, and chassis components on tracked vehicles and equipment, except for construction equipment.
68B	Aircraft Powerplant Repairer	Repairs aircraft turbine engines, engine components, and propellers.
68F	Aircraft Electrician	Maintains and repairs aircraft electrical systems, system components, and instruments.
76P	Materiel Control and Accounting Specialist	Controls and accounts for supplies and materiel, usually using computer-based accounting and control systems.

MOS DISTRIBUTION BETWEEN THE ACTIVE AND RESERVE COMPONENTS

The Army-wide distribution of these specialties between the Active and Reserve Components gives insight into the importance of the Reserve Component logistics specialists to the Total Force. Approximately one-half of the positions or billets designated for these seven MOSs in the Total Army force structure in Fiscal Year (FY) 1984 are authorized in the Reserve Component.

This distribution is shown in Table 2-2. These Army-wide authorizations include many billets not assigned to tactical or tactical-support units -- for example, instructors and support personnel in the training base and support personnel in nondeployable organizations and in depots.

TABLE 2-2. AC/RC[1] DISTRIBUTION OF SEVEN SELECTED SKILLS ARMY-WIDE (AUTHORIZED)

MOS	QUANTITY				PERCENT OF TOTAL	
	Total	Active	ARNG	USAR	Active	Combined RC
44E	1,866	772	733	361	41.4	58.6
45G	326	190	109	27	58.3	41.7
61B	1,512	776	188	546	51.5	48.5
63H	11,733	5,693	4,906	1,134	48.5	51.5
68B	1,433	780	483	170	54.4	45.6
68F	724	475	198	51	65.6	34.4
76P	12,636	5,971	4,090	2,575	47.3	52.7
Total	30,230	14,659	10,707	4,864	48.5	51.5

[1]Active Component/Reserve Component.

While the proportion of the total Army strength of these MOSs assigned to the Reserve Component is substantial, the Reserve Component's role in non-divisional, in-theater logistics support units is even more significant. These units provide a broad range of supply, maintenance, and transportation support in the corps rear area and in the echelons above the corps in support of the theater of operations. Over 60 percent of the billets designated for the seven MOSs in nondivisional supply, maintenance, and transportation units assigned to the Reserve Component. The Active and Reserve Component distribution for these units is shown in Table 2-3.

TABLE 2-3. AC/RC DISTRIBUTION OF SEVEN SELECTED SKILLS
NONDIVISION CORPS- AND ARMY-LEVEL SUPPORT
(AUTHORIZED)

MOS	QUANTITY				PERCENT OF TOTAL	
	Total	Active	ARNG	USAR	Active	Combined RC
44E	833	289	336	198	35.1	64.9
45G	95	39	3	21	41.1	58.9
61B	1,296	652	122	522	50.3	49.7
63H	5,331	1,926	2,445	960	36.1	63.9
68B	649	265	225	159	40.8	59.2
68F	223	119	62	42	53.4	46.6
76P	6,024	2,351	1,604	2,069	39.0	61.0
Total	14,441	5,641	4,829	3,971	39.1	60.9

MOS PROGRESSION

Apprentice

Army junior apprentices (grade E3) in technical logistics specialties usually perform their duties under the supervision of journeymen. For example, 61B watercraft operator apprentices are deck crew members, not boat pilots, and work under the control and supervision of journeyman or master-level boat pilots. Track Vehicle and Aircraft Power Plant Repairers (63H and 68B) at the junior apprentice level perform corrective work on faults and malfunctions diagnosed by others. In completing these and other tasks, apprentices practice previously acquired skills and acquire new ones. Experience brings promotion to E4 while still performing SL1 or apprentice tasks. In this way, the apprentice experiences on-the-job training (OJT) under the direction of more seasoned specialists.

Journeyman

The journeyman logistics specialist performs independent tasks of greater complexity than the apprentice. In some cases (44E, 45G, 76P), record-keeping responsibilities occur for the first time. Malfunction diagnosis responsibilities are greater for the journeyman who is a repairer, as are the responsibilities for quality control (45G, 68F). OJT supervision responsibilities appear at this level for the first time.

Master

The master logistics specialist usually exercises technical supervision over others. In at least one specialty studied (44E), however, the master specialist may be assigned to a position requiring great precision while working essentially alone. The 76P master acquires responsibility for purchasing/contracting and for commodity management for the first time. 61B master specialists become pilots and vessel masters of considerable personal authority. In general, however, the impression of the technical logistics master specialist is one of shop foreman or section chief, moving about amid technical workers who are given assistance and admonition on work technique and production.

SUMMARY

The seven specialties chosen for study represent tough, complex, and important jobs in nondivisional logistics units supporting the Army in the field. Many of these units deploy early under the Army's Time-Phased Force Deployment List and will not be afforded an opportunity for individual technical skills improvement after mobilization. These jobs are as important in the Reserve Component as they are in the Active Component to ground force combat capability.

3. THE INCUMBENT POPULATION

GENERAL

This chapter describes the Reserve Component population assigned to the seven sample MOSs and compares them to their Active Component counterparts. This comparison is made using two general sets of characteristics, personal attributes and experience, which directly affect trainability and job performance. The objective of this comparison is to identify any major and consistent differences between the Active and Reserve Component populations.

PERSONAL ATTRIBUTES

Members of the Reserve Component are similar to their Active Component counterparts occupying the logistics specialist positions studied. While some small variations do exist between the Active and the Reserve Components for the three attributes reviewed (age, aptitude area scores, and civilian education), the populations are similar. The individual Reserve Component soldier's attributes are more dispersed, however, compared with the more homogeneous Active Component populations. Tables 3-1 through 3-3 show summarized personal attribute information across the entire population of the seven logistics skills studied within the nondivisional logistics units in the Selected Reserve.

Age

Junior apprentices (non-prior-Service new accessions -- E1 to E3) are approximately the same age across all components. Senior apprentices through masters are consistently older in the Reserve Component than in the Active Component (Table 3-1).

TABLE 3-1. INCUMBENT PERSONAL ATTRIBUTES -- AGE

LEVEL OF SKILL	COMPONENT	MEAN AGE (YEARS)
Junior Apprentice (E1-E3)	Active	21.9
	ARNG	22.4
	USAR	22.5
Senior Apprentice (E4)	Active	23.8
	ARNG	27.3
	USAR	28.2
Journeyman (E5)	Active	27.1
	ARNG	33.9
	USAR	33.3
Master (E6)	Active	31.0
	ARNG	39.8
	USAR	37.9
Supervisor/Manager (E7)	Active	36.2
	ARNG	43.4
	USAR	40.2

Aptitude Area Scores[1]

There are no consistent differences between components in aptitude for the seven MOSs. The scores on the appropriate aptitude area composite for each MOS of the ASVAB shows that Active, Guard, and Reserve incumbents have about the same potential for success (Table 3-2).

[1]Aptitude Area Scores are derived by combining sub-tests scores of the Armed Services Vocational Aptitude Battery (ASVAB), and used to determine an individual's potential for success in being trained in an MOS.

TABLE 3-2. INCUMBENT PERSONAL ATTRIBUTES -- APTITUDE AREA SCORES
(Mean Scores)

GRADE	COMPONENT	SPECIALTIES						
		44E[1]	45G[1]	61B[1]	63H[1]	68B[1]	68F[1]	76P[1]
E1-E3	Active	113.3	113.0	103.1	99.5	110.6	108.5	99.9
	ARNG	104.7	NDA[2]	95.4	94.5	113.8	104.9	94.7
	USAR	105.2	106.9	102.8	98.6	111.2	103.6	99.0
E4	Active	106.1	111.4	94.6	98.3	106.1	107.2	93.1
	ARNG	111.8	118.0	106.2	97.1	109.9	108.4	97.5
	USAR	105.5	96.0	94.9	98.8	111.0	118.0	95.6
E5	Active	108.7	114.7	95.0	98.2	105.5	100.8	97.3
	ARNG	108.2	NDA	113.5	102.4	111.4	127.7	98.4
	USAR	112.3	NDA	100.8	103.1	113.4	115.5	100.3
E6	Active	102.7	113.0	105.6	98.5	118.0	NDA	98.4
	ARNG	113.2	NDA	NDA	109.0	122.5	NDA	93.5
	USAR	105.8	NDA	119.8	110.2	120.0	124.0	103.4
E7	Active	NDA	NDA	NDA	NDA	NDA	NDA	111.0
	ARNG	NDA	NDA	NDA	117.5	NDA	NDA	123.0
	USAR	NDA	NDA	105.0	112.7	NDA	NDA	111.8
Total	Active	109.1	112.6	98.5	98.7	107.9	105.8	96.1
	ARNG	109.4	118.0	106.4	98.6	111.7	109.9	96.4
	USAR	106.7	106.1	101.1	100.8	111.6	113.1	98.5

[1]Minimum Aptitude Area Scores are: 95 (General Maintenance) for 44E, 95 (Electronics) for 45G, 95 (Mechanical Maintenance) for 61B, 85 (Mechanical Maintenance) for 63H, 100 (Mechanical Maintenance) for 68B, 100 (Mechanical Maintenance) for 68F, and 90 (Clerical) for 76P.

[2]NDA: No data available.

Civilian Education

Both the ARNG and USAR have substantially larger percentages of non-high-school graduates than the Active Component (Table 3-3). This is especially evident at the junior and senior apprentice levels. Across the seven MOSs, 40 to 50 percent of the Reserve Component's junior apprentices in nondivisional logistics units are not high school graduates (see data on junior apprentices in Appendices A through G). At the journeyman and master

levels, the ARNG and USAR have substantially larger percentages of soldiers with some college experience than does the Active Component.

TABLE 3-3. INCUMBENT PERSONAL ATTRIBUTES -- CIVILIAN EDUCATION COMPLETED
(Percentage of Total)

COMPONENT	NONGRADUATE[1]	GED[2]	HSDG[3]	SOME COLLEGE[4]
Active	6.5	0	87.6	5.8
ARNG	14.6	3.0	70.1	12.3
USAR	18.1	10.1	54.6	15.2

[1]Incumbents who have not graduated from high school.

[2]Incumbents who have completed high school through General Education Development (GED) equivalency.

[3]Incumbents who are high-school-diploma graduates but have no college work.

[4]Incumbents who have completed some college or university work.

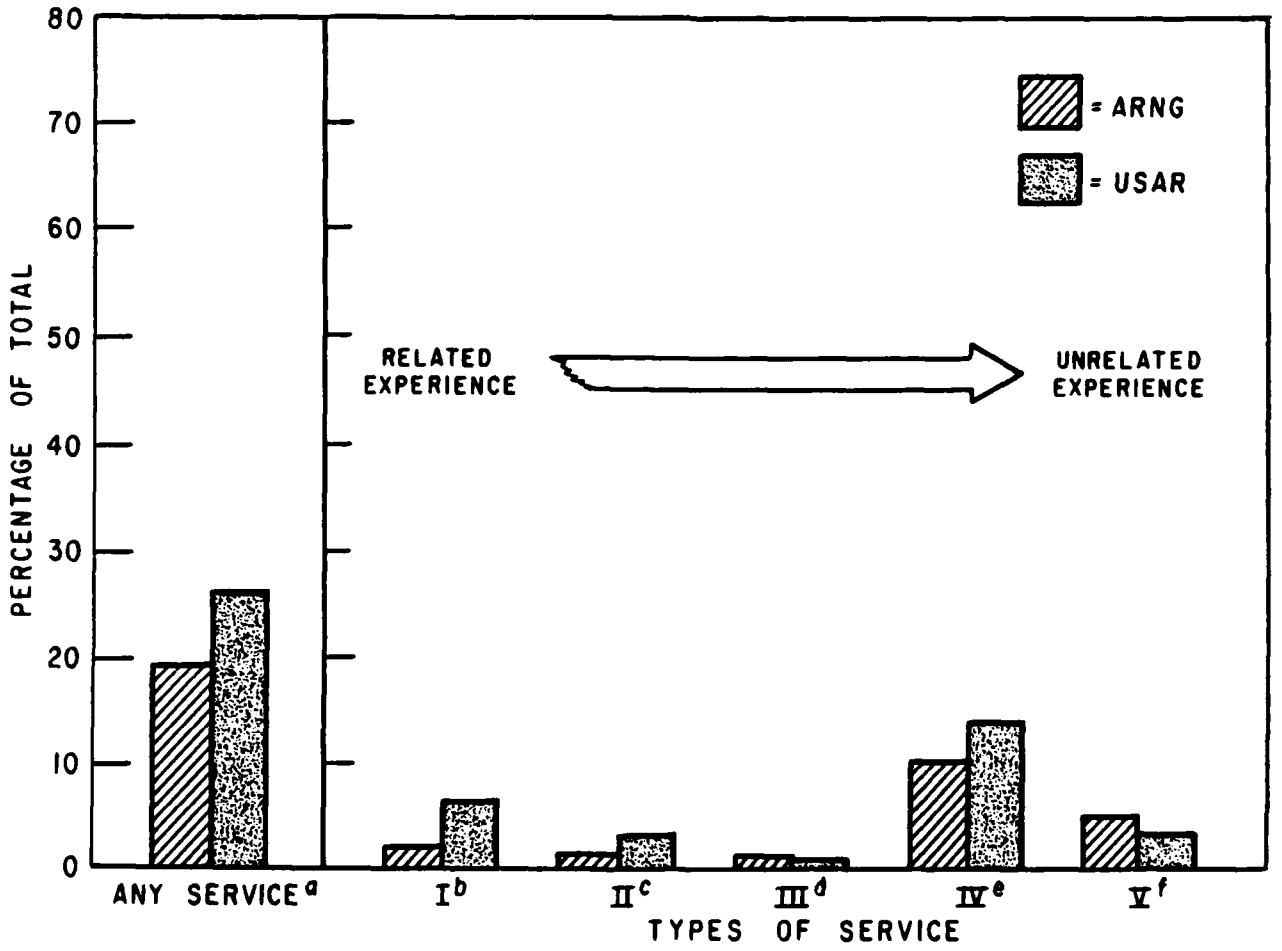
EXPERIENCE

Prior military service, length of present service, and time in grade constitute the three experience factors reviewed for the Reserve Component incumbent population studied. Within each specialty, if a significant portion of incuments had had related job experience during prior military service, the population of soldiers would be an easier group to train than if they came to their present Reserve Component assignments without any military experience in these or similar skills.

Prior Military Service

For the MOS of interest, the amount of applicable prior-active military experience for the Reserve Component incumbents is insignificant (see Figure 3-1). While the percentages of the Reserve Component's soldiers in the selected specialties with some form of prior military service exceeds

FIGURE 3-1. INCUMBENT EXPERIENCE -- PRIOR MILITARY SERVICE
(Seven Technical Logistics Skills)



[a]Percentage of incumbents having any type of prior military service (sum of Types I through V).

[b]Percentage of incumbents having prior service in the Army in the same MOS.

[c]Percentage of incumbents having prior service in the Army, not in the same MOS but in same career field.

[d]Percentage of incumbents having prior service in another service and in same career field.

[e]Percentage of incumbents having prior service in the Army but not in same career field.

[f]Percentage of incumbents having prior service in another service but not in same career field.

20 percent for the ARNG and approaches 30 percent for the USAR, the number of soldiers with experience in the same MOS or in a related MOS is below 10 percent for both the Guard and the Reserve.

Length of Service/Time in Grade

Members of the Guard/Reserve clearly have accrued greater length of service and time in grade than have the Active Component specialists occupying similar positions. It is difficult, however, to assess the implications of these differences due to the lack of accepted conversion criteria involving duty days and training days per year across components. Table 3-4 shows information for these two experience factors across all seven selected skills by enlisted grade.

TABLE 3-4. INCUMBENT EXPERIENCE -- LENGTH OF SERVICE/ TIME IN GRADE

LEVEL OF SKILL	COMPONENT	AVERAGE LOS[1]	AVERAGE TIG[2]
Junior Apprentice (E1-E3)	Active	2.0	0.8
	ARNG	2.3	1.8
	USAR	2.0	1.3
Senior Apprentice (E-4)	Active	4.0	1.5
	ARNG	5.6	2.8
	USAR	6.1	3.9
Journeyman (E-5)	Active	7.0	2.0
	ARNG	10.1	3.9
	USAR	10.1	3.5
Master (E-6)	Active	10.9	2.1
	ARNG	16.3	4.7
	USAR	13.6	3.9
Supervisor/Manager (E-7)	Active	16.4	2.6
	ARNG	21.3	6.6
	USAR	17.0	4.4

[1]Length of service.

[2]Time in grade.

Full-Time Support

One aspect of the Reserve Component incumbent experience which can influence the ability of the Reserve Component logistics specialists to sustain and improve their skills is the level and nature of full-time support available in the specialties of interest. Full-time support is available both to ARNG and to USAR units of the Selected Reserve. This support is provided primarily by some 26,000 Active Guard/Reserve (AGR) officers and enlisted persons and by almost 32,000 civilian technicians Army-wide.[2]

These AGR personnel and technicians are assigned to Reserve Component units and, with very few exceptions, are obligated to mobilize and deploy with their units. They provide stability and continuity through their full-time employment status, and they offer a sizable potential training resource in their specialties to the part-time members of their units.

Table 3-5 shows the distribution of AGR and technician full-time support in seven specialties assigned to the nondivisional USAR and ARNG logistics units chosen for study. These data represent the military position of assignment only, and may or may not reflect the nature of the civilian full-time job held for the technician population. At the present time, the USAR does not require compatibility between the civilian job and the military position of assignment. While the ARNG does require such a compatibility (in Technician Personnel Regulation 300), supplemental guidance issued by the ARNG to its technicians permits a technician to be assigned typically to any one of more than 20 MOSs within several Career Management Fields.

---

[2]These totals do not consider the 2,100 Active Component soldiers serving as Reserve Component unit advisors or an additional 6,500 Department of the Army (DA) civilian employees who provide clerical and administrative support to the Reserve Component.

TABLE 3-5. FULL-TIME SUPPORT[1] FOR RC IN SEVEN SELECTED SKILLS
(Nondivisional Logistics Units)

MOS	TOTAL RC AUTHORIZED	FULL-TIME SUPPORT	
		Assigned	Percent of Authorized
44E	590	87	15
45G	56	0	0
61B	644	12	2
63H	3,405	657	19
68B	384	8	2
68F	104	3	3
76P	3,673	245	7
Total	8,800	1,010	11

[1]Does not include Active Component advisors or DA civilian clerical employees.

Because of the vagueness in matching the full-time civilian job to the wartime military job, we are unable to determine the training benefits associated with significant levels of full-time support. It is not clear that current policies and practices will ensure that job experience gained during the normal workweek will be applicable to the wartime military job.

Other Experience Factors

During the design of the project, we identified two important additional considerations which are listed as questions below.

- How long has the incumbent served in his/her present job? (This is an attempt to compare personnel turbulence.)
- What is the Reserve Component incumbent's civilian occupation? (This is an attempt to assess the extent of utilization of civilian skills in these technical fields.)

Ultimately, these considerations proved impossible to include in the study. In the first instance, the Defense Manpower Data Center encountered search difficulties in matching individual personnel files with historical

unit personnel transaction files. While it may yet be possible to generate time-in-job data for these populations once the difficulty has been overcome, we decided to set aside the effort in the interest of a timely report submission. In the second instance, we discovered that no official civilian occupation data file exists for members of the Army Selected Reserve. The information is apparently captured from individual members of the Guard/Reserve, but the data are not encoded and stored in any central repository for members of the Selected Reserve in either the ARNG or the USAR.

SUMMARY

When the variations in characteristics between the Active and Reserve Components' incumbent populations are considered, both from the perspective of selected personal attributes and from that of experience, the dominant impression is one of similarities, rather than one of differences. Certainly, the Guard/Reserve soldiers who become logistics specialists do not appear to be any easier to train than their Active Component counterparts, based on the data analyzed for this report.

4. LOGISTICS SKILL TRAINING SYSTEM

TRAINING STRATEGY

General

For the seven MOSs of interest, the standard training program is essentially the program used to train Active Component soldiers. Training developers concentrate on the Active Army soldier as the target audience when designing training programs to develop and sustain technical logistics skills. In order to meet the unique needs of the Reserve Component soldier, these training programs are modified marginally without major structural change.

The Active Component training model in these technical fields calls for a lengthy (from 6 to 26 weeks) Advanced Individual Training (AIT) followed by periods of OJT, interspersed with advanced training in some cases. Table 4-1 shows the institutional training associated with the seven specialties included in this study.

TABLE 4-1. LENGTH OF INSTITUTIONAL TRAINING FOR SEVEN SELECTED SKILLS
(Number of Weeks)

MOS	APPRENTICE	JOURNEYMAN	MASTER
44E	15.6	0	18.6
45G	26.2	0	0
61B	6.4	2.4	0
63H	8.0	0	11.8
68B	17.6	0	5.6
68F	24.2	0	5.6
76P	8.0	0	0

Junior Apprentice Training

The objective of apprentice training (AIT in the Army) is to teach skills appropriate for entry-level performance of duty in the unit. Among the technical MOSs reviewed, that objective is met by teaching some or all of the tasks (49 percent for MOS 61B, 100 percent for MOS 44E and 76P) expected of the apprentice on the job. Where less than 100 percent of performance tasks are taught in the AIT training phase, unit-based training is considered a more effective approach for the remaining tasks assigned to that specialty. That is clearly the case with, for example, 61B watercraft operators over one-half of whose tasks relate to a specific type vessel which is located in the unit of assignment.

Senior Apprentice Training

Apprentice training continues after the soldier leaves the training institution. Since the apprentice skill level represents such a range of performance ability, those skills are sharpened and practiced routinely, and new skills are acquired, through OJT in the unit. OJT in Guard/Reserve logistics units differs from that in Active Component logistics units because of differences in equipment availability, differences in peacetime operating tempo, and differences in time availability. The objective of OJT in the unit, sustainment of learned skills and acquisition of additional skills, is the same for both Active and Reserve Component soldiers.

Journeyman Training

In six of the seven skills studied (61B is the exception), journeyman status is reached by means of OJT. This fact is an indication of the dependence of the Army's technical logistics training strategy upon this important and difficult type of training. Journeyman training is aided by the existence of Soldier's Manuals, Trainer's Guides, and Job Books -- training

publications which can be extremely helpful during OJT. In those cases such as 45G where these manuals are not yet developed, OJT is more difficult.

The resident training offered for the preparation of journeymen in Army Service Schools is called a Primary Technical Course (PTC). PTC has been offered to Reserve Component soldiers for some time, but their attendance level has been extremely low. Table 4-2 shows the scheduling and attendance records since FY82 for the single PTC (61B) involved in this study. Although about one-half of the total Army 61B billets are assigned to the Reserve Component, only seven percent of those attending the journeyman course in FY82 and FY83 were from the Reserve Component.

TABLE 4-2. JOURNEYMAN COURSE (61B PTC) SCHEDULING AND ATTENDANCE
(Training Seats)

COMPONENT	FY82		FY83		FY84
	SCHD[1]	Attended	SCHD[1]	Attended	SCHD[1]
Active	25	25	40	40	45
ARNG	1	0	1	2	1
USAR	6	0	13	3	12

[1]Scheduled.

Master Training/Merger Training

Four of the seven skills studied (44E, 63H, 68B, 68F) offer a resident course in master-level training. These courses range in length from five weeks, three days (68B and 68F) to eighteen weeks, three days (44E). The longer master's courses, for 44E and 63H, also incorporate the training of additional individual skills required by the merging of other specialties at the master level. This merger training is difficult to accomplish since it must impart knowledge and abilities in fields in which the specialist has no

experience. Those 44E and 63H soldiers unable to attend these resident courses face the challenge of acquiring these abilities and knowledge through OJT alone.

The resident training offered for the preparation of masters in Army Service Schools is called a Basic Technical Course (BTC). BTC has been offered to Reserve Component soldiers for some time, but their attendance level has not been high. Table 4-3 shows the scheduling and attendance records since FY82 for the four BTCs (44E, 63H, 68B, 68F) involved in this study. About 50 percent of the total Army billets for the four MOSs are authorized in the Reserve Component. In FY82 to FY83, only about two percent of the master course attendees were Reserve Component soldiers.

TABLE 4-3. MASTER COURSE (BTC) SCHEDULING AND ATTENDANCE (FOUR COURSES)

(Training Seats)

COMPONENT	FY82		FY83		FY84
	SCHD[1]	Attended	SCHD[1]	Attended	SCHD[1]
Active	478	548	479	344	390
ARNG	11	8	8	5	10
USAR	21	2	50	3	78

[1]Scheduled.

TRAINING SUPPORT

Training simulators, devices, and other support materials have been developed for and are used primarily by Active Component trainers. We could not discover any instance where training devices or simulators were developed primarily with the Reserve Component specialist in mind. On the other hand, the three Army Service Schools that provide training in the seven MOSs in this

study are developing training support materials. Those materials represent for the most part the configuration of AIT courses, usually reduced in length, for prior-service Reserve Component soldiers who require retraining in these technical specialties.

The growing number of these configured, apprentice-level courses indicates that the Army recognizes that most prior-service personnel who enter the Reserve Component do not have any training or experience in the jobs to which they are assigned in their new Reserve Component units. The configured courses are to be administered by units of assignment in cooperation with the USAR School System. The single Reserve Component configured course description (for 63H10) we were given contained slightly fewer hours of technical instruction than the Army's 63H10 resident AIT.

TRAINING STRATEGY AND PERSONNEL MANAGEMENT

Training strategy and training programs are inevitably affected by personnel management policies. Limited promotion opportunities which exist in isolated, small Guard/Reserve units create pressures for reclassification and/or transfer. This in turn produces additional challenges to the training community and to unit leaders. While we heard a number of anecdotes involving personnel actions of this kind, the magnitude of this problem is unclear.

An Army-wide personnel management policy with serious consequences for Reserve Component logistics specialists is that of merging MOSs at the senior enlisted grades. MOS merging requires the soldier to become proficient in new skill areas in order to provide technical supervision for other logistics specialists and to conduct OJT. For example, the 63H specialist is a track vehicle repairer responsible for performing support maintenance on engine, powertrain, and chassis components of track vehicles. At the master level (E6), the 63H is expected to acquire specialist skills in the 63W (wheel

vehicle repairer) and the 63G (fuel and electrical systems repairer) MOS. The impact of such a greatly increased task list (incorporating technical skills from additional specialties) in many small and isolated Reserve Component units is a challenge which may be insurmountable under the existing system.

THE RESERVE COMPONENT TRAINING ENVIRONMENT

The military training environment of the ARNG and USAR differs markedly from that of the Active Component. The primary training difficulties caused by the Reserve Component environment result from the limited time available, the lack of a wartime-related workload to support OJT and on-the-job experience (OJE), and the absence of higher skilled technicians and training support equipment in isolated units.

In general, these Reserve Component nondivisional logistics units are limited to no more than 38 days per year available for training. These days are divided between a periodic Inactive Duty Training (IDT) phase (approximately 24 days) and an active duty Annual Training (AT) phase (approximately 14 days). Additional brief periods of active duty may be authorized on special occasions when the need can be demonstrated. Normally the IDT phase consists of a series of Multiple Unit Training Assemblies (MUTAs) of two-days duration each month. IDT is normally performed at the unit's local armory or center, or at a nearby training site (where equipment concentrations may exist) when special arrangements are made. AT is normally conducted at major Army installations.

Another obstacle to the conduct of OJT in the Reserve Component is the geographic dispersion of the units. These nondivisional logistics units are organized in company- or smaller-sized units (fewer than 300 soldiers) and distributed throughout the United States. Many of these units, especially

maintenance units, include a wide variety of MOSs. This results in few billets of any specific MOS authorized for any one unit. Additionally, because these organizations support combat units and theater-specific lines of communication, the weapons and other systems they must support are not typically available for IDT in peacetime.

For certain technical skills which are system-specific, the training environment of the Guard/Reserve offers a potential advantage over that of the Active Army. When 68B or 68F soldiers from the Guard/Reserve attend AIT, for example, their units of assignment together with the assigned equipment of that unit are known. Their Active Component counterparts may be assigned to any one of a wide variety of units with various types of equipment. In these cases, the Reserve Component technical skill training could be tailored to concentrate on the equipment that the trainees will be required to support.

5. OBSERVATIONS

TRAINING REQUIRED

The Reserve Component logistics specialists require essentially the same length and intensity of training as Active Component logistics specialists. The wartime unit missions and job performance requirements are the same for the Guard/Reserve as for Active units and soldiers. Satisfactory job performance by Reserve Component logistics specialists in a supporting role is critical to the mission accomplishment of supported Active and Reserve Component units alike. Many Guard/Reserve units to which logistics specialists are assigned are scheduled very early in the deployment sequence, thus allowing no time for individual skill training between mobilization and deployment. These facts argue strongly for fully developed skills among Reserve Component logistics specialists.

Although the incumbent populations of Active and Reserve Component specialists included in this study do display some differences between components, the most powerful impression is one of similarity. Given the descriptive information available, it appears there is no substantial difference in the difficulty of the tasks of training Active and Reserve Component soldiers in these skills.

TRAINING STRATEGIES

Army training strategies, designed primarily for Active Army soldiers, do not meet the specific needs of Reserve Component soldiers. For all specialties reviewed, the training programs are designed initially and primarily for Active Army soldiers -- despite a heavy dependence in the force upon Reserve Component specialist populations -- and then modified, to the extent feasible,

to fit a quite different Reserve Component training environment. The programs place reliance upon substantial levels of OJT and lengthy resident training -- both readily available to soldiers on extended active duty -- while neither is feasible for most Guard/Reserve technical specialists.

Very few Reserve Component-oriented training support materials, other than paper-based materials, have been developed to support Reserve Component logistics training. No Reserve Component-oriented training devices or simulators were found that will enable Guard/Reserve logistics specialists (especially those in small, remote units) to maintain desirable levels of hands-on training in a unit setting.

PERSONNEL MANAGEMENT STRATEGIES

Personnel management policies, designed for the Active Army, produce problems in the training of Reserve Component logistics specialists. The great majority of Guard/Reserve enlistments into logistics specialties are made by individuals who have not had prior military service in the same career field. Whatever the formal emphasis placed upon acquiring experienced, prior-service personnel to serve the Army in their specialties in the Guard/Reserve, that effort has not been very effective. Less than 10 percent of the current population of Reserve Component logistics specialists have had related prior-Service experience.

The Army's Enlisted Personnel Management System (EPMS) calls for the occasional merging of specialties at the master specialist level. In the cases where this merging occurs, the problems created in the Reserve Component training environment are more difficult than those in the Active Army. Guard/Reserve specialists do not characteristically attend the mid-career resident training designed to provide for this merging. The burden of acquiring the ability to accomplish and supervise additional job tasks in the dispersed training environment of the Reserve Component is significant.

APPENDIX A

ARMY MACHINIST

SPECIALTY: 44E (Military Occupation Specialty (MOS)).

TITLE: Machinist.

PHYSICAL DEMAND RATING: Heavy.

QUALIFICATIONS FOR AWARD OF MOS

General

The following general qualifications must be met to be awarded an MOS:

- successful completion of 44E Initial Entry Training (IET);
- a score of 95 or higher on the General Maintenance (GM) aptitude area of the Armed Services Vocational Aptitude Battery (ASVAB);
- a physical profile of at least 322222;
- normal color vision;
- visual acuity of at lease 20/30 with corrective lenses;
- no more than one error on Titmus Stereo Circles at sixteen inches or no errors on eight positions on Verhoeff Stereopter at sixteen inches.

Additional Skill Identifiers (ASIs)[1]

There are no ASIs for this specialty.

[1]ASIs are specialized skills, qualifications, and requirements closely related to, but in addition to, those inherent in the MOS. ASIs generally require special schooling and may be awarded to individual soldiers or identified with a specific organizational position requiring special qualifications.

THE JOB

General

The Army machinist makes, repairs, and modifies parts using a variety of tools. Those parts may be of metal or of some other material. This specialist also supervises others who do this type of work and supervises metalworking shop activities.

As an apprentice, the machinist accomplishes relatively simple layouts, machine drawings, equipment set-ups, and marking of reference prints; selects and uses cutting tools (including toolbit grinding and setting); and checks and measures the work using a variety of mechanical and other devices. In addition, the apprentice machinist uses many hand tools and operates machine tools, often under supervision. He/she reads and applies information in technical manuals and diagrams.

At the journeyman level, the Army machinist provides technical advice and assistance to the apprentice. In addition, he/she converts instructions and drawings to machining operations, fabricates and modifies more complex metallic and nonmetallic parts using one of several machine tools, and performs heat-treating procedures (annealing, hardening, tempering, etc.). Increased responsibility for records and tool and equipment accountability occurs at this level as well.

As a master machinist, the soldier performs both technical work requiring very high skill and technical supervision requiring substantial judgment and experience. This technical work includes the design and fabrication of special dies and jigs as well as special tools to facilitate metalworking operations. Dimension tolerance levels for grinding, boring, and honing are reduced for this machinist. As a technical supervisor, the master machinist inspects incoming work and determines the extent and nature of machining to be

accomplished. He/she schedules, assigns, and coordinates technical work performed by others according to capability and availability of machinists and equipment.

Units of Assignment

The distribution of Army machinists is skewed toward those units of Corps Support Commands and Theater Army Area Commands furnishing direct and general support maintenance to Army combat forces. Approximately 46 percent of all Army machinists positions are found in these units, while 19 percent are found in the tailored units represented by Tables of Distribution and Allowances, 13 percent in combat divisions, and 22 percent in a collection of miscellaneous units distributed throughout the Army.

Peacetime versus Wartime

Due to the basic and fundamental nature of machinists' work, there is little difference between the job demands upon a 44E in peacetime and those which occur during war. Theater of assignment and types of equipment supported during war should have little effect upon performance in this specialty. Improvisation and substitution due to material shortages are to be expected during war. It is difficult to estimate the extent to which these or similar problems occur during peacetime.

Implications of Force Modernization

Of the seven technical Army skills selected for this study, 44E is the least affected by the introduction of new systems into the force.

Career Progression/Merging

As an Army apprentice machinist acquires satisfactory work experience, he/she may be promoted to E4 (SP4) machinist, to E5 (SP5) machinist, and to E6 (SSG) precision machinist in succession. In selected cases, the experienced and successful E5 (SP5) machinist is promoted on a "supervisory" track

to E6 (SSG) section chief, to E6 (SSG) welder supervisor (directing the work of four to eight welders or blacksmiths), or to E6 (SSG) metalworker/hull supervisor.

The 44E soldier who is an E6 (SSG) is considered to be a master machinist. Merging of the 44B (metalworker) and the 44E (machinist) progression tracks occurs at this level, which calls for supervision by the E6 44E of journeyman metalworkers as well as supervision of other machinists.

THE INCUMBENT POPULATION

Personal Attributes

Age. In general, ARNG and USAR machinists are older than Active Component machinists. In addition, the dispersion of ages within the population of ARNG and USAR machinists studied is greater than the dispersion of ages for Active Army machinists. Table A-1 displays this information.

TABLE A-1. 44E INCUMBENT PERSONAL ATTRIBUTES -- AVERAGE AGE

GRADE	COMPONENT	MEAN AGE (YRS)
E1-E3	Active	21.6
	ARNG	22.2
	USAR	23.5
E4	Active	22.8
	ARNG	26.3
	USAR	27.9
E5	Active	26.9
	ARNG	33.6
	USAR	37.1
E6	Active	33.9
	ARNG	39.8
	USAR	39.9
E7	Active	35.9
	ARNG	42.2
	USAR	42.0

Aptitude Area Scores. Army machinists are required to achieve a score of at least 95 in the GM aptitude area of the ASVAB. There are no consistent differences in aptitude scores between components, as shown by the information in Table A-2.

TABLE A-2. 44E INCUMBENT PERSONAL ATTRIBUTES -- AVERAGE ASVAB APTITUDE AREA (GM) SCORES

GRADE	COMPONENT	MEAN SCORE
E1-E3	Active	113.3
	ARNG	104.7
	USAR	105.2
E4	Active	106.1
	ARNG	111.8
	USAR	105.5
E5	Active	108.7
	ARNG	108.2
	USAR	112.3
E6	Active	102.7
	ARNG	113.2
	USAR	105.8
E7	Active	NDA[1]
	ARNG	NDA
	USAR	NDA
Total	Active	109.1
	ARNG	109.4
	USAR	106.7

[1]No data available.

Civilian Education Completed. Fewer Reserve Component machinists are high-school-diploma graduates than are their Active Army counterparts. On the other hand, more Reserve Component machinists hold General Education Development (GED) certificates of graduation, and a greater portion of the Reserve Component machinist population have completed at least some college work. Table A-3 contains information on civilian education completed.

TABLE A-3. 44E INCUMBENT PERSONAL ATTRIBUTES -- CIVILIAN EDUCATION COMPLETED
(Percentage of Total)

GRADE	COMPONENT	NON-GRADUATE[1]	GED[2]	HSDG[3]	SOME COLLEGE[4]
E1-E3	Active	3.1	NDA[5]	95.4	1.5
	ARNG	34.0	4.3	59.6	2.1
	USAR	27.0	10.8	56.8	2.7
E4	Active	6.5	NDA	89.6	3.9
	ARNG	24.2	NDA	62.9	12.9
	USAR	7.1	3.6	71.4	10.7
E5	Active	NDA	NDA	96.9	1.5
	ARNG	7.5	11.9	70.1	10.4
	USAR	5.9	14.7	55.9	23.5
E6	Active	NDA	NDA	89.8	10.2
	ARNG	6.8	4.7	80.4	8.1
	USAR	6.5	8.7	56.5	26.1
E7	Active	NDA	NDA	86.4	13.6
	ARNG	8.7	2.2	78.3	10.9
	USAR	NDA	25.0	58.3	16.7
Total	Active	2.4	NDA	92.4	4.9
	ARNG	13.5	4.9	72.7	8.9
	USAR	10.8	10.8	59.2	16.6

[1]Incumbents who have not graduated from high school.

[2]Incumbents who have completed high school through General Education Development (GED) equivalency.

[3]Incumbents who are high-school-diploma graduates but have no college work.

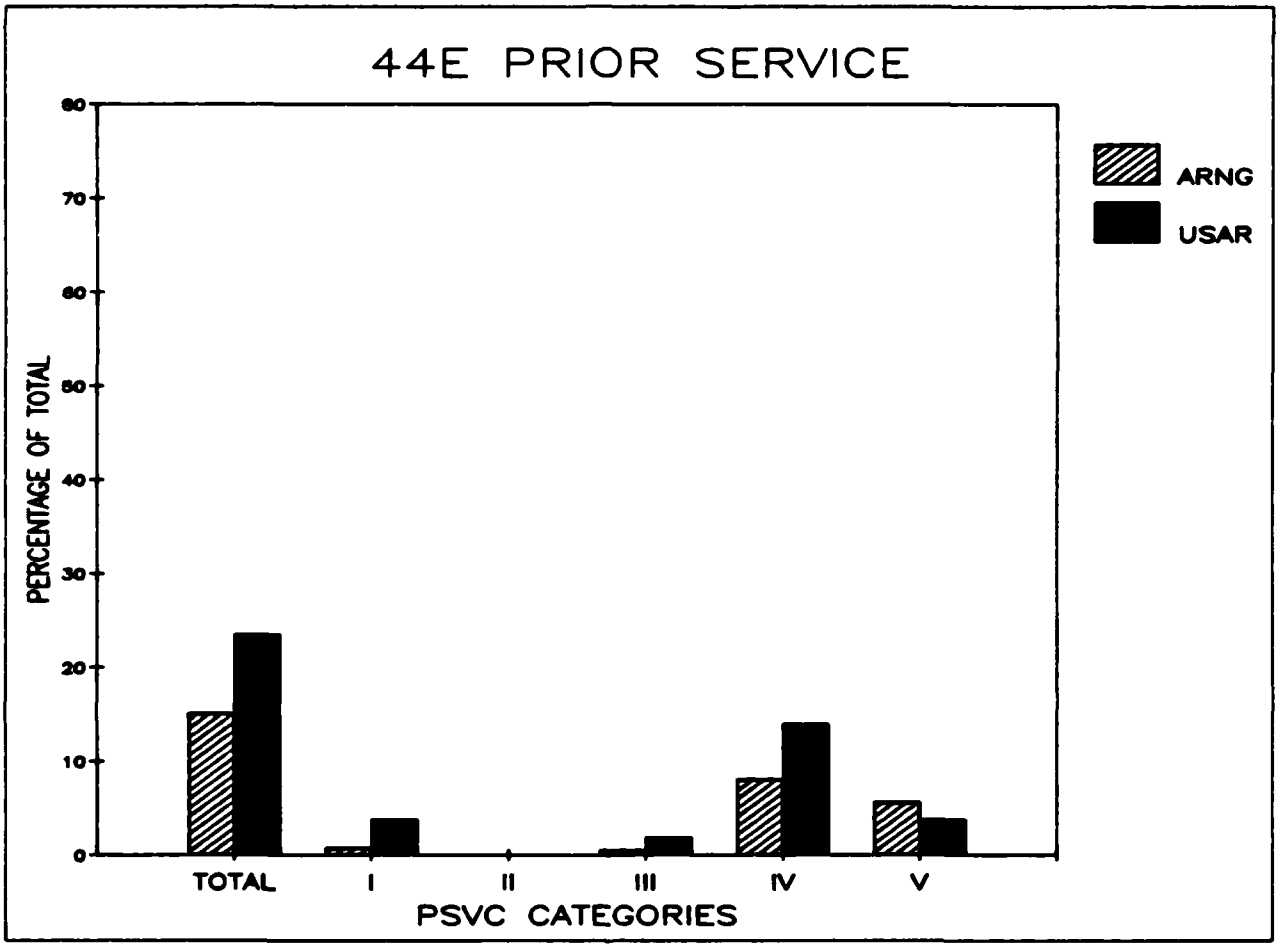
[4]Incumbents who have completed at least some college or university work.

[5]No data available.

Experience

Prior Military Service. Less than one-third of the Guard/Reserve machinists studied have had prior military service of any kind. Of those bringing some military service experience to their present Army specialties, only a small percentage benefit from experience in the same occupational field in any military service. Figure A-1 contains this information.

FIGURE A-1. 44E INCUMBENT EXPERIENCE -- PRIOR MILITARY SERVICE



NOTE: The following are descriptions of prior-service categories (PSVC) shown in the figure: TOTAL -- percentage of incumbents having any type of prior military service (sum of Categories I through V); I -- percentage of incumbents having prior service in the Army in the same MOS; II -- percentage of incumbents having prior service in the Army, not in the same MOS, but in the same career field; III -- percentage of incumbents having prior service in another service and in the same career field; IV -- percentage of incumbents having prior service in the Army but not in the same career field; V -- percentage of incumbents having prior service in another service but not in the same career field.

Length of Present Service. Guard/Reserve machinists at all grade levels have served longer than their Active Army counterparts. Table A-4 shows the comparative data for Active Army, Army National Guard, and Army Reserve.

TABLE A-4. 44E INCUMBENT EXPERIENCE -- LENGTH OF PRESENT MILITARY SERVICE

GRADE	COMPONENT	MEAN LENGTH OF SERVICE (YRS)
E1-E3	Active	2.0
	ARNG	2.2
	USAR	2.9
E4	Active	3.8
	ARNG	4.8
	USAR	5.2
E5	Active	7.3
	ARNG	9.6
	USAR	10.7
E6	Active	13.3
	ARNG	16.1
	USAR	13.6
E7	Active	15.3
	ARNG	20.8
	USAR	16.9

Time in Grade. As with length of present military service, the time spent in a present enlisted grade is longer for the Reserve Component machinist than for the Active Component machinist. This is true for all 44E enlisted grades. Table A-5 displays specific information, by grade.

Full-Time Support. Some full-time support for nondivisional logistics support units in the 44E specialty is provided by civilian technicians assigned to 44E military billets and by Active Guard/Reserve (AGR) enlisted 44E specialists. These full-time support people are normally required to

TABLE A-5. 44E INCUMBENT EXPERIENCE -- TIME IN GRADE

GRADE	COMPONENT	TIME IN GRADE (YRS)
E1-E3	Active	0.6
	ARNG	0.9
	USAR	0.7
E4	Active	1.3
	ARNG	1.9
	USAR	1.6
E5	Active	2.8
	ARNG	3.3
	USAR	4.2
E6	Active	3.1
	ARNG	4.6
	USAR	3.2
E7	Active	2.0
	ARNG	5.0
	USAR	3.8

mobilize and deploy with their units of assignment. While they represent a potentially valuable source of skill and experience for the support of training of the part-time Guard/Reserve incumbents in this specialty, the extent to which that support occurs is not clear. The USAR does not require technicians' military positions and full-time jobs to be compatible. While the ARNG does require such a position compatibility, the National Guard Bureau's specific guidance to its technicians in the field normally allows for assignments to one of several dozen MOSs for each ARNG technician position. Thus, throughout the Reserve Component there is no real assurance of a skills match between the technician's full-time job and military position in which that person will deploy in wartime. Table A-6 shows the quantity of 44E military positions in the units studied which are occupied by full-time AGR and technician personnel.

TABLE A-6. 44E FULL-TIME SUPPORT[1] FOR GUARD/RESERVE
(Nondivisional Logistics Units)

GRADE	AUTHORIZED	FULL-TIME SUPPORT	
		Assigned	Percent of Authorized
E3	168	3	2
E4	134	2	1
E5	65	6	9
E6	154	44	29
E7	69	32	46
Total	590	87	15

[1]Does not include Active Component advisors or Department of the Army civilian clerical employees.

THE TRAINING PROGRAM

Apprentice Training

After completion of Basic Training (BT) (a course of seven weeks duration conducted at several locations in the Army training base), all soldiers (Active and Guard/Reserve) who are to become machinists attend Advanced Individual Training (AIT), lasting 15 weeks and 2 days at the U.S. Army Ordnance Center and School, Aberdeen Proving Grounds, Maryland. This training teaches the soldier all Skill Level (SL)1 or apprentice tasks. The MOS 44E10 is awarded at the end of AIT. ARNG and Army Reserve soldiers with prior Army service as machinists undergo neither BT nor machinist AIT. Prior-service Guard and Reserve soldiers without experience as machinists are invited to attend AIT but are not required to complete BT prior to reporting to their units of initial assignment.

Journeyman Training/Sustainment Training

Journeyman and sustainment training of 44E10 and 44E20 machinists is accomplished in units by means of on-the-job training (OJT) utilizing the 44E10/20 Soldier's Manual (a technical training publication) and the Job Book (a performance record) under the direction of a first-line military supervisor. That supervisor is aided in his/her work by a specialty-specific Trainer's Guide.

Masters Training

Training Army machinists in SL3 tasks is accomplished by means of a resident Basic Technical Course (BTC) of 18-weeks, 3-days length at the U.S. Army Ordnance Center and School, Aberdeen Proving Grounds, Maryland. Eighty-nine percent of masters-level technical and supervisory tasks are taught institutionally during this course, with the remaining master's or SL3 tasks being exported for training of the individual soldier in his/her unit.

During each training year the U.S. Army Ordnance School is not able to offer enough training seats in 44E BTC to allow all Active Army machinists in SL2 to acquire SL3 skills in this way; a number of Active Army SL2 machinists are therefore required to become master machinists through the use of their Soldier's Manual, Job Book, and the 44E Trainer's Manual during OJT.

The Army Ordnance School also offers BTC training seats annually to the Army machinists of the Guard/Reserve. ARNG and USAR quotas are established along with Active Army quotas for each BTC offered. Annually, some reserved training seats go unfilled. See Table A-7.

As in the case within the active force, Reserve Component journeyman machinists unable to attend BTC must acquire their master skills by means of OJT. Due to the fact that a routine assignment for the Army master machinist

(44E30) is to supervise Army metalworkers (44B) of lower grade, the acquisition of metalworker skills at both apprentice and journeyman levels is a necessary part of SL3 machinist training, whether that training is accomplished in resident BTC or by means of OJT.

TABLE A-7. BTC SCHEDULING AND ATTENDANCE (44E)
(Training Seats)

COMPONENT	FY82		FY83		FY84
	SCHD[1]	Attended	SCHD[1]	Attended	SCHD[1]
Active	92	90	100	60	60
ARNG	2	3	5	1	5
USAR	5	0	14	0	15

[1]Scheduled.

APPENDIX B

ARMY FIRE CONTROL SYSTEMS REPAIRER

SPECIALTY: 45G (Military Occupation Specialty (MOS)).

TITLE: Fire Control Systems Repairer.

PHYSICAL DEMAND RATING: Very Heavy.

QUALIFICATIONS FOR AWARD OF MOS

General

The following general qualifications must be met to be awarded an MOS:

- successful completion of 45G Initial Entry Training (IET);
- a score of 95 or higher on the Electronics (EL) aptitude area of the Armed Services Vocational Aptitude Battery (ASVAB);
- physical profile of at least 323222;
- normal color vision;
- a security clearance of CONFIDENTIAL;
- knowledge of electrical and electronic theory as applied to several specified military devices;
- knowledge of theory of operation of certain computer components;
- knowledge of basic optical theory as applied to prisms and lasers;
- open to males only.

Additional Skill Identifiers (ASIs)[1]

L8: Direct support/general support fire control computer repairs of M1 tank, taught in Course 113-ASIL8, M1 Tank Fire Control System/Fire Control

[1]ASIs are specialized skills, qualifications, and requirements closely related to, but in addition to, those inherent in the MOS. ASIs generally require special schooling and may be awarded to individual soldiers or identified with a specific organizational position requiring special qualifications.

Computers, at the U.S. Army Ordnance Center and School, Aberdeen Proving Grounds, Maryland. This ASI course lasts four weeks.

THE JOB

General

The Army fire control systems repairer repairs and otherwise maintains a variety of sophisticated fire control equipment and devices, usually mounted in Army combat vehicles. This equipment includes laser range finders, electronic ballistic computers, tank thermal sights, ground laser locator designators, laser infrared observation devices, multiple launch rocket systems, surface launched unit fuel/air explosives, and the division air defense gun system. This is a relatively new specialty, having been established in 1980.

As an apprentice, this specialist employs assorted test equipment in the identification and isolation (diagnosis) of equipment malfunctions, applying knowledge as well as maintenance standards and procedures. He also inspects and corrects previously diagnosed malfunctions and interprets work orders to determine work required. Under direct supervision of repairers with greater skill, he applies analytical maintenance procedures, performing component removal and replacement, as well as the repair of those components, except for circuit boards. He synchronizes systems which require it, obtains and assembles replacement parts, and performs operating or built-in tests to ascertain a mechanism's operational capability within specified standards. He understands and applies information from schematics and from technical manuals and installs authorized modifications on assigned and supported equipment.

At the journeyman level the fire control systems repairer oversees the installation of modifications to equipment and performs apprentice-level

work. In addition, the journeyman is responsible for adherence to maintenance standards and procedures, for the conduct of the on-the-job training (OJT) of apprentices, for the utilization of proper tools and equipment, and for planning the inspection, testing, and repair of faulty components. This specialist also maintains appropriate maintenance records.

As a master technician, this specialist supervises and instructs men of lesser skills in troubleshooting and maintenance practices and procedures. He also plans and organizes work schedules, assigns work, establishes priorities, allocates workloads, and substitutes parts. He provides quality assurance and controls, performing final inspection and tests for repaired equipment. In addition, the master fire control systems repairer provides advice, assistance, and instruction to using units on operational and maintenance matters related to fire control mechanisms.

Units of Assignment

There are few (328) fire control systems repairers assigned to units of the Active Army and fewer still assigned to the ARNG (21) and the USAR (25). In the Army as a whole, 45G positions are now found predominately (46 percent) at the division and separate brigade level, with another 19 percent existing as part of the Tables of Distribution and Allowances. The remaining positions generally represent specialists assigned to the heavy equipment maintenance companies, forward (and rear) maintenance companies, and nondivisional maintenance companies which provide direct and general support maintenance to Army combat units. It is the latter, nondivisional grouping of units in which the positions and specialists of this study are found. Of the 76 Reserve Component 45G positions included in this study, 64 are authorized singly as the only such specialty in separate, company-sized units. The remaining twelve 45G positions are found in pairs in ARNG heavy equipment maintenance companies.

Peacetime versus Wartime

The technicians of this specialty are required for the support of some of the Army's most technologically advanced combat weapon systems, some of which have yet to be distributed to units in the field. Initial distribution of those systems will be made to Active Army units, perhaps to Guard/Reserve units on a limited scale, and to Army trainers. Whether the wartime job requirements for 45G soldiers differ sharply from the peacetime requirements of that job is determined by whether these specialists support in peacetime the very same weapon systems they will support in war.

Implications of Force Modernization

Of the seven Army specialties chosen for this study, the fire control systems repairer is probably affected most by the modernization of the Army combat forces. While the fire control mechanisms of several major weapon systems now provide the basis for 45G instruction, the programmed introduction into the force of at least three new systems (fire support team vehicle, remotely piloted vehicle, and surface launched unit -- fuel/air explosive) before the end of FY88 means that those fire control specialists trained recently must update their skills and knowledge in order to support properly the new weapons arriving in the units to be supported. In addition, wider distribution of the M1 tank will require over four weeks of additional instruction in M1 fire control to be incorporated in a lengthened Advanced Individual Training (AIT) before the end of FY85.

Career Progression/Merging

The fire control systems repairer serves as an apprentice through grade E4 (SP4). Journeyman skills call for the position of E5 (SGT). As he successfully acquires additional satisfactory OJT experience, he may become an E6 fire control systems inspector (SSG) in units performing general support

maintenance, or may become an E6 fire control systems repair supervisor (SSG) supervising five or more people repairing fire control systems. No merging of the 45G with other specialties occurs at the master technician level.

THE INCUMBENT POPULATION[2]

Personal Attributes

Age. Fire control systems repairers are a group of young men. Table B-1 displays this information.

TABLE B-1. 45G INCUMBENT PERSONAL ATTRIBUTES -- AVERAGE AGE

GRADE	COMPONENT	MEAN AGE (YRS)
E1-E3	Active	22.8
	ARNG	25.7
	USAR	21.5
E4	Active	22.2
	ARNG	32.6
	USAR	21.5
E5	Active	25.0
	ARNG	31.4
	USAR	NDA[1]
E6	Active	28.4
	ARNG	NDA
	USAR	27.7

[1]No data available.

Aptitude Area Scores. These specialists are required to achieve a score of at least 95 in the EL aptitude area of the ASVAB. The average aptitude scores are shown in Table B-2.

[2]Substantive conclusions based on these data should be avoided due to the existence of very small population cells.

TABLE B-2. 45G INCUMBENT PERSONAL ATTRIBUTES -- AVERAGE ASVAB APTITUDE AREA (EL) SCORES

GRADE	COMPONENT	MEAN SCORE
E1-E3	Active	113.3[1]
	ARNG	NDA
	USAR	106.9
E4	Active	111.4
	ARNG	118.0
	USAR	96.0
E5	Active	114.7
	ARNG	NDA
	USAR	NDA
E6	Active	113.0
	ARNG	NDA
	USAR	NDA
E7	Active	NDA
	ARNG	NDA
	USAR	NDA
Total	Active	112.6
	ARNG	118.0
	USAR	106.1

[1]No data available.

Civilian Education Completed. For data on civilian education completed see Table B-3.

Experience

Prior Military Service. The data display for prior military service is at Figure B-1.

TABLE B-3. 45G INCUMBENT PERSONAL ATTRIBUTES -- CIVILIAN EDUCATION COMPLETED
(Percentage of Total)

GRADE	COMPONENT	NON-GRADUATE[1]	GED[2]	HSDG[3]	SOME COLLEGE[4]
E1-E3	Active	5.9	NDA[5]	94.1	NDA
	ARNG	NDA	NDA	100.0	NDA
	USAR	30.8	15.4	46.2	7.7
E4	Active	7.1	NDA	90.5	2.4
	ARNG	NDA	NDA	100.0	NDA
	USAR	NDA	50.0	50.0	NDA
E5	Active	5.3	NDA	89.5	5.3
	ARNG	NDA	NDA	100.0	NDA
	USAR	NDA	NDA	NDA	NDA
E6	Active	NDA	NDA	80.0	20.0
	ARNG	NDA	NDA	NDA	NDA
	USAR	NDA	NDA	100.0	NDA
E7	Active	NDA	NDA	NDA	NDA
	ARNG	NDA	NDA	NDA	NDA
	USAR	NDA	NDA	NDA	NDA
Total	Active	6.0	NDA	90.4	3.6
	ARNG	NDA	NDA	100.0	NDA
	USAR	25.0	18.8	50.0	6.3

[1]Incumbents who have not graduated from high school.

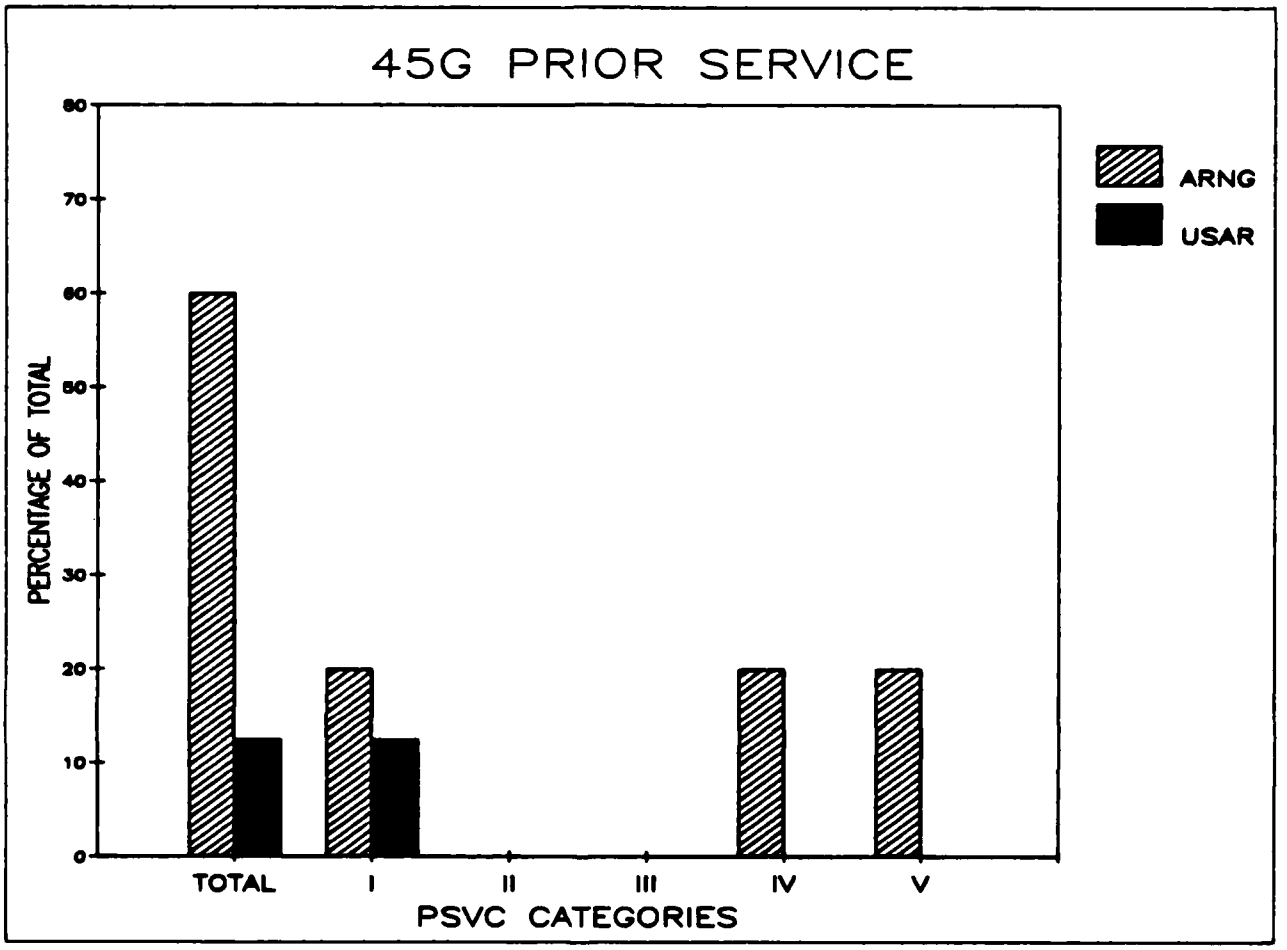
[2]Incumbents who have completed high school through General Education Development (GED) equivalency.

[3]Incumbents who are high-school-diploma graduates but have no college work.

[4]Incumbents who have completed at least some college or university work.

[5]No data available.

FIGURE B-1. 45G INCUMBENT EXPERIENCE -- PRIOR MILITARY SERVICE



NOTE: The following are descriptions of prior-service categories (PSVC) shown in the figure: TOTAL -- percentage of incumbents having any type of prior military service (sum of Categories I through V); I -- percentage of incumbents having prior service in the Army in the same MOS; II -- percentage of incumbents having prior service in the Army, not in the same MOS, but in the same career field; III -- percentage of incumbents having prior service in another service and in the same career field; IV -- percentage of incumbents having prior service in the Army but not in the same career field; V -- percentage of incumbents having prior service in another service but not in same career field.

Length of Present Service. For data on length of present service see Table B-4.

TABLE B-4. 45G INCUMBENT EXPERIENCE -- LENGTH OF PRESENT MILITARY SERVICE

GRADE	COMPONENT	MEAN LENGTH OF SERVICE (YRS)
E1-E3	Active	2.6
	ARNG	1.5
	USAR	0.9
E4	Active	2.8
	ARNG	6.8
	USAR	4.3
E5	Active	5.4
	ARNG	11.4
	USAR	NDA[1]
E6	Active	8.6
	ARNG	NDA
	USAR	8.8

[1]No data available.

Time in Grade. The time in grade for all 45G technicians in both Active and Reserve Components appears to be very short in this rapidly developing specialty. Table B-5 displays specific information by grade.

TABLE B-5. 45G INCUMBENT EXPERIENCE -- TIME IN GRADE

GRADE	COMPONENT	TIME IN GRADE (YRS)
E1-E3	Active	0.8
	ARNG	0.6
	USAR	0.7
E4	Active	0.9
	ARNG	2.2
	USAR	2.6
E5	Active	1.5
	ARNG	1.7
	USAR	NDA[1]
E6	Active	1.8
	ARNG	NDA
	USAR	2.3

[1]No data available.

Full-Time Support. No civilian technicians or Active Guard/Reserve (AGR) personnel are assigned to any of the 45G military billets of the nondivisional logistics units represented in this study.

THE TRAINING PROGRAM

Apprentice Training

Standard Army Basic Training (BT) of 7 weeks for all logistics soldiers is followed by a lengthy AIT of 22 weeks and 3 days for all 45G soldiers, conducted at the U.S. Army Ordnance Center and School at Aberdeen Proving Grounds, Maryland. That training teaches the soldier to perform approximately 77 percent of the tasks needed to function satisfactorily at the beginning apprentice level (Skill Level (SL)1) in Army units. The remaining 23 percent of the 45G apprentice tasks are learned while in the units of initial assignment under OJT conditions. The MOS 45G10 is awarded upon completion of AIT.

Journeyman Training/Sustainment Training

Once the new 45G apprentice reaches his unit, he must not only complete his apprentice training by means of OJT but also learn to accomplish all tasks associated with journeyman-level duty performance by means of OJT, since no Primary Technical Course (PTC) exists for this purpose. At the same time, of course, apprentice skills in fire control systems repairing are being practiced and sharpened. No Soldier's Manual or Trainer's Guide has yet been developed for this training.

Masters Training

In a similar way, tasks associated with masters-level performance for 45G soldiers must be learned through OJT in the absence of a Soldier's Manual or Trainer's Guide. These publications have yet to be developed by the U.S. Army Ordnance Center and School, Aberdeen Proving Grounds, Maryland.

APPENDIX C

ARMY WATERCRAFT OPERATOR

SPECIALTY: 61B (Military Occupation Specialty (MOS)).

TITLE: Watercraft Operator.

PHYSICAL DEMAND RATING: Very Heavy.

QUALIFICATIONS FOR AWARD OF MOS

General

The following general qualifications must be met to be awarded an MOS.

- a score of 95 or higher on the Mechanical Maintenance (MM) aptitude area of the Armed Services Vocational Aptitude Battery (ASVAB);
- physical profile of at least 222221;
- visual acuity and color vision test scores as outlined in Army Regulation (AR) 611-201;
- additional MOS code qualifications dealing with marine examinations and certifications are contained in AR 56-9.

Additional Skill Identifiers (ASIs)[1]

E6: Lighter Air Cushion Vehicle (LACV-30). Due to the fact that no Guard/Reserve watercraft operators are scheduled to operate the LACV-30 in the foreseeable future, this study did not include consideration of ASI job demands or training.

[1]ASIs are specialized skills, qualifications, and requirements closely related to, but in addition to, those inherent in the MOS. ASIs generally require special schooling and may be awarded to individual soldiers or identified with a specific organizational position requiring special qualifications.

THE JOB

General

The Army watercraft operator operates Army watercraft and amphibians and performs deck duties on those craft. In addition, this specialist supervises the work of other crew members on those craft.

As an apprentice, the watercraft operator serves as a marine/amphibian crew member aboard Army watercraft, performing seaman and maintenance duties as a subordinate to more senior and experienced watercraft operators. Duties of the apprentice include such functions as assisting in docking, cleaning and painting, standing watch, working with fire equipment and lifeboats or rafts, communicating by radio, steering and manipulating controls, and serving as a relief operator of the craft.

As a journeyman, the Army watercraft operator performs seaman and communication duties of greater complexity and responsibility than those of the apprentice, applying principles of piloting and dead reckoning, taking bearing by means of instruments, and aligning the craft with landmarks or buoys. The journeyman also manipulates the helm and engine controls to beach, dock and undock, tow vessels, and perform other maneuvers. In addition, the journeyman 61B allocates watercraft and operators to various tasks and keeps watercraft records.

At the master level, this specialist supervises the embarking and debarking of troops and instructs crew members in operational practices and techniques. In addition, he/she performs assignment and dispatching operations, and plans and controls formations, as well as providing berthing and unberthing services to larger vessels. Computation of fuel requirements, maintenance planning and employment of procedures for abandoning ship, and performing rescue at sea are other duties performed by the master specialist.

Units of Assignment

The largest quantities of watercraft operators (45 percent of all such positions) are found in the Army's medium and heavy transportation boat companies. Another 22 percent of these positions appear in smaller teams available for tailoring into larger units for port operations and similar ship-to-shore activities. An additional 14 percent now appear in the Army's new LACV-30 units, medium lighter companies (Air Cushion Vehicle (ACV)). Eight percent are found in the Tables of Distribution and Allowances units and another six percent in amphibious units.

Peacetime versus Wartime

The job performance of each 61B soldier is largely related to a single type of vessel (more than half the 61B training tasks are vessel-specific). Barring transfer, the type of vessel to which the Reserve Component watercraft operator is assigned in peacetime is the type of vessel on which this specialist will serve when mobilized. The operation of any single vessel should therefore suffer little impact in transition to wartime. On the other hand, the integrated wartime operation of that single vessel as part of a larger unit involved in a joint or combined team presents special problems. That operation calls for increased complexity in ship-to-shore operations and will certainly require preparation of boat crews in peacetime.

Implications of Force Modernization

The Army does not plan to introduce its LACV-30 into ARNG or USAR units within the foreseeable future. The Guard/Reserve watercraft operators now man and operate LCU and LCM-8 vessels (in addition to limited numbers of the amphibious LARC vessels). No immediate change is foreseen in these types of vessels or in their sophistication. As a result, there currently appears to be no force modernization implications for this specialty.

Career Progression/Merging

The apprentice Army watercraft operator serves as a crew member aboard an Army marine vessel or amphibious vessel. In that capacity, this soldier may reach the grade of E4 (SP4). With additional experience and skills learned, this technician may become an E5 (SP5) Dispatcher or an E5 (SP5) Watercraft Operator/Amphibian Operator. These latter grades correspond loosely to the recognition of a journeyman status within this specialty. At the master level, the 61B soldier may hold the position of Section Leader/Squad Leader, Crew Chief or Watercraft Non-Commissioned Officer Boatswain -- all as an E6 (SSG). All of the masters-level duty positions call for technical supervisory duties over subordinate crew members.

No merging of occupational titles, specialties, or military jobs occurs in the 61B MOS from apprentice through master levels.

THE INCUMBENT POPULATION

Personal Attributes

Age. Guard/Reserve watercraft operators are generally older than Active Army 61Bs. The average age of Guard/Reserve watercraft operators is higher at every enlisted grade level. Age dispersion, although not shown below, is much greater in both the ARNG and USAR than among Active Army 61Bs. Table C-1 displays this information.

Aptitude Area Scores. Army watercraft operators are required to achieve a score of at least 95 on the MM aptitude area of the ASVAB. The data available on these scores for incumbents show no clear trend, with some scores not available for review, as shown by the information in Table C-2.

TABLE C-1. 61B INCUMBENT PERSONAL ATTRIBUTES -- AVERAGE AGE

GRADE	COMPONENT	MEAN AGE (YRS)
E1-E3	Active	22.5
	ARNG	24.2
	USAR	22.4
E4	Active	23.7
	ARNG	33.3
	USAR	29.0
E5	Active	26.1
	ARNG	35.6
	USAR	32.3
E6	Active	29.8
	ARNG	42.3
	USAR	39.3
E7	Active	34.4
	ARNG	44.3
	USAR	39.9

TABLE C-2. 61B INCUMBENT PERSONAL ATTRIBUTES -- AVERAGE ASVAB APTITUDE AREA (MM) SCORES

GRADE	COMPONENT	MEAN SCORE
E1-E3	Active	103.1
	ARNG	95.4
	USAR	102.8
E4	Active	94.6
	ARNG	106.2
	USAR	94.9
E5	Active	95.0
	ARNG	113.5
	USAR	100.8
E6	Active	105.6
	ARNG	NDA[1]
	USAR	119.8
E7	Active	NDA
	ARNG	NDA
	USAR	105.0
Total	Active	98.5
	ARNG	106.4
	USAR	101.1

[1]No data available.

Civilian Education Completed. In the lowest enlisted grades, a large portion of the Reserve Component watercraft operators have not graduated from high school, while at the upper grades, a larger portion of Reserve Component 61Bs have attended college than their Active Component counterparts. Table C-3 contains information on civilian education completed.

TABLE C-3. 61B INCUMBENT PERSONAL ATTRIBUTES -- CIVILIAN EDUCATION COMPLETED
(Percentage of Total)

GRADE	COMPONENT	NON-GRADUATE[1]	GED[2]	HSDG[3]	SOME COLLEGE[4]
E1-E3	Active	16.8	NDA[5]	80.2	3.0
	ARNG	44.4	11.1	44.4	NDA
	USAR	43.9	17.8	34.6	1.9
E4	Active	12.9	NDA	83.4	3.7
	ARNG	19.2	NDA	65.4	15.4
	USAR	20.6	7.4	66.2	5.9
E5	Active	9.7	NDA	88.3	1.9
	ARNG	7.9	NDA	65.8	26.3
	USAR	19.4	4.5	46.3	28.4
E6	Active	2.4	NDA	89.4	8.2
	ARNG	8.3	NDA	75.0	16.7
	USAR	NDA	6.1	57.1	34.7
E7	Active	NDA	NDA	87.1	12.9
	ARNG	NDA	NDA	60.0	40.0
	USAR	NDA	8.7	56.5	34.8
Total	Active	11.7	NDA	84.3	4.0
	ARNG	13.7	1.0	65.7	19.6
	USAR	23.6	10.2	49.0	15.9

[1]Incumbents who have not graduated from high school.

[2]Incumbents who have completed high school through General Education Development (GED) equivalency.

[3]Incumbents who are high-school-diploma graduates but have no college work.

[4]Incumbents who have completed at least some college or university work.

[5]No data available.

Experience

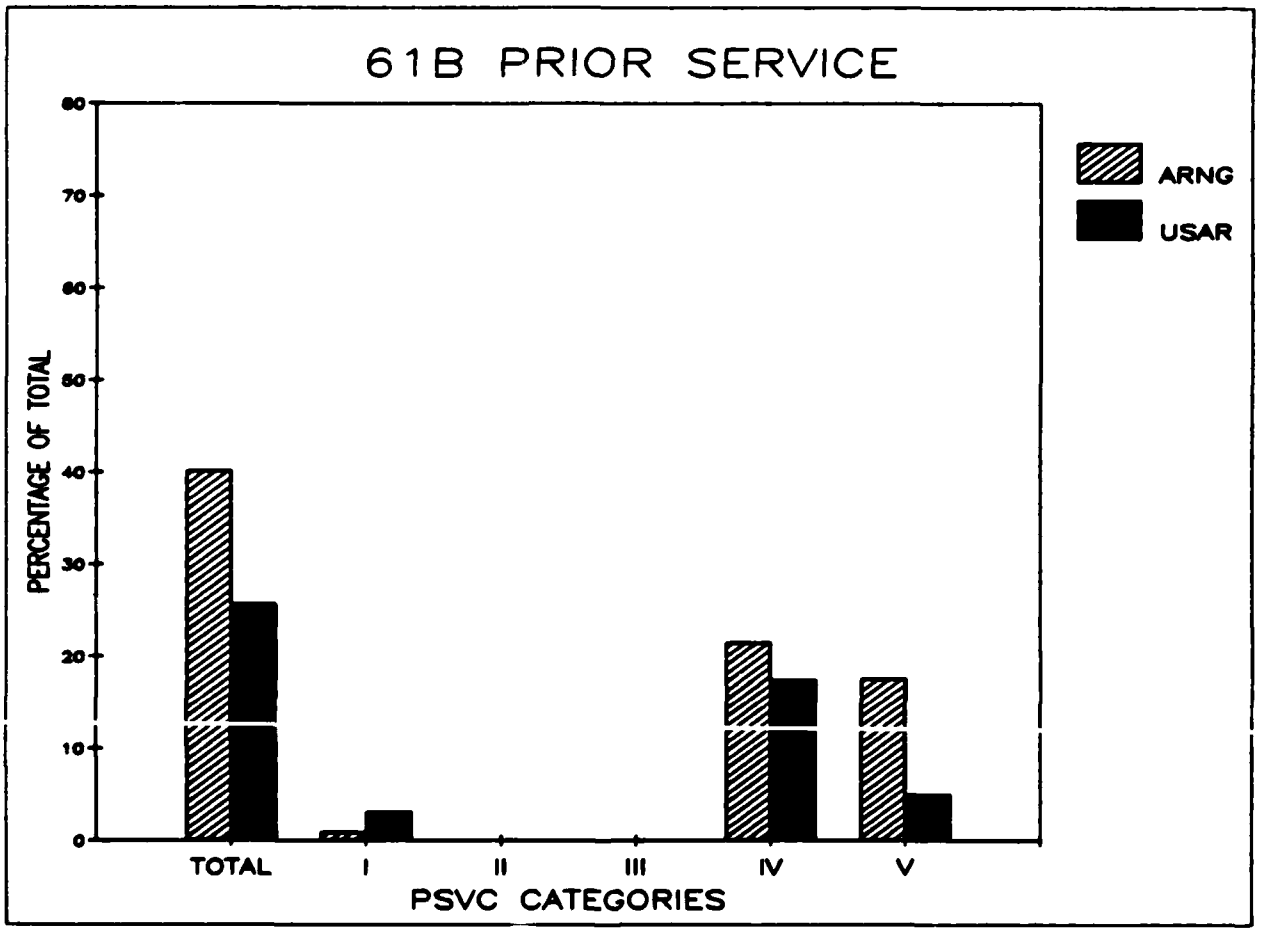
Prior Military Service. While more than one-third of Guard/Reserve watercraft operators have had some prior military service, fewer than 10 percent have had military experience in the same or a similar specialty. Figure C-1 contains this information.

Length of Present Service. ARNG and USAR incumbents have longer average terms of current service than Active Army incumbents in this specialty. The variance in length of service is also greatest among 61Bs in the Reserve Component. Table C-4 shows the comparative data for Active Army, Army National Guard, and Army Reserve.

Time in Grade. Guard/Reserve 61B specialists have spent a longer time in their present grades than have Active Army watercraft operators as shown in Table C-5.

Full-Time Support. Some full-time support for nondivisional logistics support units in the 61B specialty is provided by civilian technicians assigned to 61B military billets and by Active Guard/Reserve (AGR) enlisted 61B specialists. These full-time support people are normally required to mobilize and deploy with their units of assignment. While they represent a potentially valuable source of skill and experience for the support of training of the part-time Guard/Reserve incumbents in this specialty, it is not clear that that support occurs. The USAR does not require that technicians' military positions and full-time jobs be compatible. While the ARNG does require such a position compatibility, the National Guard Bureau's specific guidance to its technicians in the field normally allows for assignments to one of several dozen MOSs for each ARNG technician position. Thus, throughout the Reserve Component there is no real assurance of a skills match between the

FIGURE C-1. 61B INCUMBENT EXPERIENCE -- PRIOR MILITARY SERVICE



NOTE: The following are descriptions of prior-service categories (PSVC) shown in the figure: TOTAL -- percentage of incumbents having any type of prior military service (sum of Categories I through V); I -- percentage of incumbents having prior service in the Army in the same MOS; II -- percentage of incumbents having prior service in the Army, not in the same MOS, but in the same career field; III -- percentage of incumbents having prior service in another service and in the same career field; IV -- percentage of incumbents having prior service in the Army but not in the same career field; V -- percentage of incumbents having prior service in another service but not in the same career field.

TABLE C-4. 61B INCUMBENT EXPERIENCE -- LENGTH OF PRESENT MILITARY SERVICE

GRADE	COMPONENT	MEAN LENGTH OF SERVICE (YRS)
E1-E3	Active	2.0
	ARNG	3.8
	USAR	1.6
E4	Active	3.8
	ARNG	7.9
	USAR	6.1
E5	Active	6.0
	ARNG	9.9
	USAR	10.2
E6	Active	10.0
	ARNG	16.7
	USAR	14.6
E7	Active	14.5
	ARNG	19.9
	USAR	17.1

TABLE C-5. 61B INCUMBENT EXPERIENCE -- TIME IN GRADE

GRADE	COMPONENT	TIME IN GRADE (YRS)
E1-E3	Active	0.9
	ARNG	0.7
	USAR	1.5
E4	Active	1.2
	ARNG	1.7
	USAR	2.3
E5	Active	1.3
	ARNG	3.5
	USAR	3.4
E6	Active	1.9
	ARNG	4.9
	USAR	3.9
E7	Active	1.7
	ARNG	7.4
	USAR	4.6

technician's full-time job and military position in which that person will deploy in wartime. Table C-6 shows the quantity of 61B military positions in the units studied which are occupied by full-time AGR and technician personnel.

TABLE C-6. 61B FULL-TIME SUPPORT[1] FOR GUARD/RESERVE
(Nondivisional Logistics Units)

GRADE	AUTHORIZED	FULL-TIME SUPPORT	
		Assigned	Percent of Authorized
E3	171	0	0
E4	156	0	0
E5	197	1	1
E6	77	6	8
E7	43	5	12
Total	644	12	2

[1]Does not include Active Component advisors or Department of the Army civilian clerical employees.

THE TRAINING PROGRAM

Apprentice Training

Following Basic Training (BT), the soldier who is to become an Army watercraft operator (for both Active Army service and service in the Guard/Reserve) attends an Advanced Individual Training (AIT) course of six-weeks, two-days duration at the U.S. Army Transportation School at Ft. Eustis, Virginia. This training provides the soldier with the common, entry-level skills required to perform crew member duties on Army watercraft but, since more than 50 percent of the tasks required of the apprentice 61B are vessel-specific tasks, a majority of this technician's training is accomplished by the unit of initial assignment after the soldier reaches that unit.

Journeyman Training/Sustainment Training

Of the Army specialties selected for study, the 61B watercraft operator is the only one for which a Primary Technical Course (PTC) is offered for journeyman or Skill Level (SL)2 training. This resident course, which lasts two weeks and two days, is taught at the U.S. Army Transportation School, Ft. Eustis, Virginia. As was the case with apprentice training, a majority of the tasks associated with journeyman training are specific ones related to the type of vessel to which the technician is assigned. Journeyman (SL2) training is therefore completed in the unit by means of on-the-job training (OJT) rather than at the U.S. Army Transportation School. Sustainment training for both apprentice- and journeyman-level skills is the responsibility of the unit as well. This specialist utilizes the appropriate Soldier's Manual, and his/her supervisor uses the 61B Trainer's Guide to aid in this training.

PTC training seats for watercraft operators are offered to ARNG and USAR soldiers annually, but the soldier's record of attendance is limited. Table C-7 shows the scheduling and attendance history of this course since FY82 began.

TABLE C-7. PTC SCHEDULING AND ATTENDANCE FOR 61B SPECIALISTS
(Training Seats)

COMPONENT	FY82		FY83		FY84
	SCHD[1]	Attended	SCHD[1]	Attended	SCHD[1]
Active	25	25	40	40	45
ARNG	1	0	1	2	1
USAR	6	0	13	3	12

[1]Scheduled.

Masters Training

No Basic Technical Course (BTC) for masters-level skills (SL3) is offered in this logistics specialty. SL3 training occurs through OJT in units for 61B soldiers.

APPENDIX D

ARMY TRACK VEHICLE REPAIRER

SPECIALTY: 63H (Military Occupation Specialty (MOS)).

TITLE: Track Vehicle Repairer.

PHYSICAL DEMAND RATING: Very Heavy.

QUALIFICATIONS FOR AWARD OF MOS

General

The following general qualifications must be met to be awarded an MOS.

- successful completion of 63H Initial Entry Training (IET);
- a score of 85 or higher on the Mechanical Maintenance (MM) aptitude area of the Armed Services Vocational Aptitude Battery (ASVAB);
- a physical profile of 222232;
- normal color vision;
- current equipment qualification record for all equipment maintained.

Additional Skill Identifiers (ASIs)[1]

L8: Tank repair (M1), taught in Course 610-ASIL8 (63H), Track Vehicle Repairer (M1), at the U.S. Army Ordnance Center and School, Aberdeen Proving Grounds, Maryland. This ASI course lasts four weeks.

[1]ASIs are specialized skills, qualifications, and requirements closely related to, but in addition to, those inherent in the MOS. ASIs generally require special schooling and may be awarded to individual soldiers or identified with a specific organizational position requiring special qualifications.

M5: ABRAMS/BRADLEY fighting vehicle, taught in Course 610-ASIM5 (63H), Abrams/Bradley Fighting Vehicle, at the U.S. Army Ordnance Center and School, Aberdeen Proving Grounds, Maryland. This ASI course lasts 70 hours.

THE JOB

General

The Army track vehicle repairer repairs engines, power trains, and chassis components on tracked vehicles and equipment, except for construction equipment. In senior positions, the 63H specialist also supervises this work performed by others and oversees work on wheeled vehicles, materials handling (and other) equipment, as well as supervising fuel and electrical system repair by others.

As an apprentice, the track vehicle repairer often works under the supervision of other 63H specialists, usually correcting malfunctions that have been diagnosed by others. This specialist may work independently, however, as an E4 (SP4) in units authorized only one 63H position. His/her work may involve obtaining parts and replacing valves, shafts, gears, bearings, etc., and may also involve the use of jacks, jigs, pullers, and gages. The apprentice is also expected to test the operation of repaired vehicles and to use hand and power tools under supervision. This specialist also plays an important role in the recovery of damaged or inoperable tracked vehicles by operating and positioning the recovery vehicle, as well as following rigging techniques in the use of hoists, cables, and slings as recovery is made.

The journeyman track vehicle repairer supervises apprentices and performs more complex and difficult work personally. The journeyman uses test, measuring and diagnostic equipment, along with technical publications, in troubleshooting work, and is responsible for interpreting complex schematic diagrams. This specialist uses calipers, micrometers, and similar devices in

deciding whether equipment parts are serviceable or not, and is able to determine the extent of adjustments and repairs needed. The journeyman also conducts on-the-job training (OJT) for apprentices.

At the master level, the track vehicle repairer supervises others, sometimes in a shop setting and sometimes in the field. The planning and supervision of vehicle recovery operations and the planning and organizing of maintenance work are included, as is the assignment of duties of others, including journeyman and apprentice specialists in the fields of wheeled vehicle repair and electrical and fuel systems repair. This master technician advises and assists using units on operational and maintenance matters relating to the equipment supported by the specialist. The master technician is also responsible for establishing maintenance priorities, allocating workloads among groups and substituting parts, and for planning and administering shop safety programs.

Units of Assignment

One-half of all 63H positions in the Army are found in the Tables of Organization and Equipment of the combat divisions and their subordinate elements. Another one-third represent positions in the nondivisional maintenance organizations of the units to the rear of the division. Only 14 percent of these technicians' positions are located in the Tables of Distribution and Allowances related to installations, depots, and similar operations.

Peacetime versus Wartime

The primary equipment support population of 63H specialists is the Army's tank and armored personnel carrier fleets. At the present time, the Army uses three tanks: M1, M60A3, and M48A5. Most Guard/Reserve 63H specialists repair M48A5 tanks and M113 armored personnel carriers in peacetime, with only limited exposure to the M60A3 system and even less exposure (if any) to

the M1 system. Upon mobilization and deployment, however (depending upon the war scenario), 63H soldiers in nondivisional maintenance units will be faced with the requirement for the repair of two or three of the tank systems without the benefit of any applicable peacetime practice or experience.

Implications of Force Modernization

With the arrival of increased quantities of M1 tanks and of the initial populations of the ABRAMS/BRADLEY fighting vehicles in mechanized infantry and calvary units, 63H specialists in the Guard/Reserve will face the challenge of supporting these new systems without (for the most part) having had the benefit of training related to the new systems. Of the Army specialists chosen for study and discussed in this report, the 63H is most affected -- and affected adversely -- by the introduction of these new combat systems through force modernization.

Career Progression/Merging

The track vehicle repairer serves as an apprentice through grade E4 (SP4) in the position of repairer/recovery vehicle operator. As this specialist acquires satisfactory experience and journeyman skills, he/she may become an E5 (SGT). Further progression to the master technician level means assignment as an E6 recovery supervisor (SSG), an E6 technical inspector (SSG), or an E6 automotive repair supervisor (SSG) or fuel and electrical systems repair supervisor (SSG). At the master technician or E6 level, this specialty merges with specialties 63W Wheel Vehicle Repairer and 63G Fuel and Electrical Systems Repairer.

THE INCUMBENT POPULATION

Personal Attributes

Age. At the lowest enlisted grades (E1 through E3), the ages of Active and Reserve Component 63H specialists are comparable. At all higher

grades, Reserve Component specialists are older. Table D-1 displays this information.

TABLE D-1. 63H INCUMBENT PERSONAL ATTRIBUTES -- AVERAGE AGE

GRADE	COMPONENT	MEAN AGE (YRS)
E1-E3	Active	22.1
	ARNG	21.9
	USAR	22.9
E4	Active	23.8
	ARNG	26.7
	USAR	27.4
E5	Active	26.5
	ARNG	33.8
	USAR	31.6
E6	Active	29.6
	ARNG	39.9
	USAR	36.8
E7	Active	35.2
	ARNG	43.8
	USAR	39.8

Aptitude Area Scores. Army track vehicle repairers are required to achieve a score of at least 85 in the MM aptitude area of the ASVAB. At the lowest enlisted grades, the scores of Active Army incumbents exceed those of Reserve Component incumbents (ARNG scores actually average less than the 95 required), while at the upper grades Reserve Component specialists' scores are higher. These average scores are shown in Table D-2.

TABLE D-2. 63H INCUMBENT PERSONAL ATTRIBUTES -- AVERAGE ASVAB APTITUDE AREA (MM) SCORES

GRADE	COMPONENT	MEAN SCORE
E1-E3	Active	99.5
	ARNG	94.5
	USAR	98.6
E4	Active	98.3
	ARNG	97.1
	USAR	98.8
E5	Active	98.2
	ARNG	102.4
	USAR	103.1
E6	Active	98.5
	ARNG	109.9
	USAR	110.2
E7	Active	NDA[1]
	ARNG	117.5
	USAR	112.7
Total	Active	98.7
	ARNG	98.6
	USAR	100.8

[1]No data available.

Civilian Education Completed. A remarkably large group of 63H specialists in the Guard/Reserve -- from E1 through E5 -- have not completed high school. Conversely, throughout the upper enlisted grades, a larger group of Reserve Component specialists than Active Component specialists have taken some college work. Table D-3 contains information on civilian education completed.

Experience

Prior Military Service. Less than one-third of track vehicle repairers in the Guard/Reserve have prior military experience. Those having served on active duty in the same MOS or in a related field, however, represent a much smaller fraction of these Reserve Component specialists. Figure D-1 contains this information.

TABLE D-3. 63H INCUMBENT PERSONAL ATTRIBUTES -- CIVILIAN EDUCATION COMPLETED
(Percentage of Total)

GRADE	COMPONENT	NON-GRADUATE[1]	GED[2]	HSDG[3]	SOME COLLEGE[4]
E1-E3	Active	10.9	NDA[5]	86.5	2.1
	ARNG	39.4	4.8	54.8	1.1
	USAR	42.3	16.9	34.9	2.6
E4	Active	11.8	NDA	85.5	2.6
	ARNG	26.6	3.7	63.6	6.1
	USAR	29.5	2.5	60.7	2.5
E5	Active	7.0	NDA	90.7	2.3
	ARNG	17.8	3.3	69.9	9.0
	USAR	13.5	6.7	69.2	9.6
E6	Active	1.8	NDA	93.5	4.8
	ARNG	10.4	3.0	76.4	10.2
	USAR	0.7	9.2	59.6	26.2
E7	Active	NDA	NDA	92.9	7.1
	ARNG	6.6	2.7	78.9	11.8
	USAR	3.7	7.9	59.1	27.4
Total	Active	7.1	NDA	89.3	3.5
	ARNG	16.3	3.3	71.6	8.8
	USAR	19.0	9.4	54.6	13.9

[1]Incumbents who have not graduated from high school.

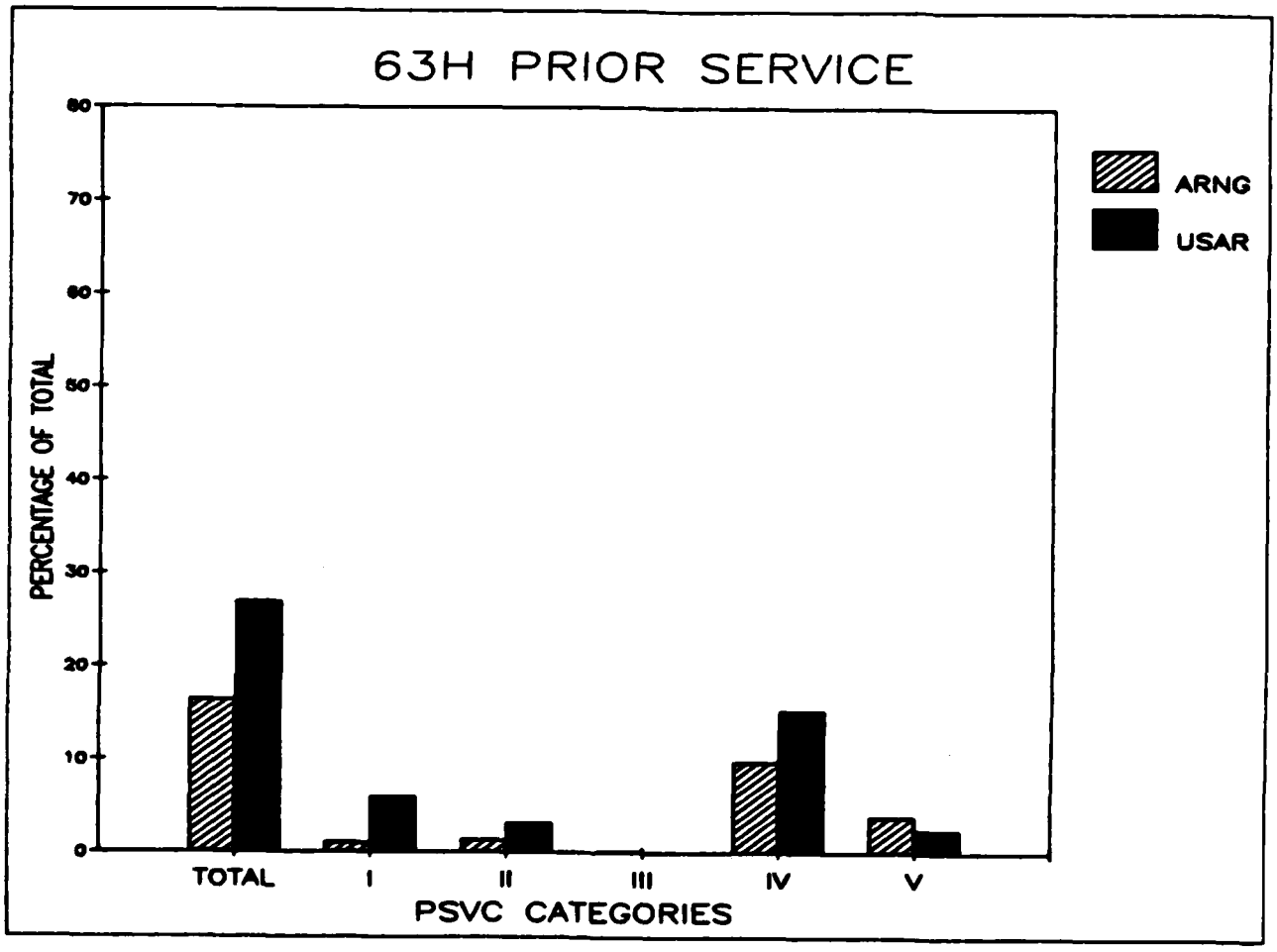
[2]Incumbents who have completed high school through General Education Development (GED) equivalency.

[3]Incumbents who are high-school-diploma graduates but have no college work.

[4]Incumbents who have completed at least some college or university work.

[5]No data available.

FIGURE D-1. 63H INCUMBENT EXPERIENCE -- PRIOR MILITARY SERVICE



NOTE: The following are descriptions of prior-service categories (PSVC) shown in the figure: TOTAL -- percentage of incumbents having any type of prior military service (sum of Categories I through V); I -- percentage of incumbents having prior service in the Army in the same MOS; II -- percentage of incumbents having prior service in the Army, not in the same MOS, but in the same career field; III -- percentage of incumbents having prior service in another service and in the same career field; IV -- percentage of incumbents having prior service in the Army but not in the same career field; V -- percentage of incumbents having prior service in another service but not in the same career field.

Length of Present Service. Members of the Guard/Reserve show greater longevity in their current terms of service once grade E4 is reached as shown in Table D-4.

TABLE D-4. 63H INCUMBENT EXPERIENCE -- LENGTH OF PRESENT MILITARY SERVICE

GRADE	COMPONENT	MEAN LENGTH OF SERVICE (YRS)
E1-E3	Active	2.4
	ARNG	2.4
	USAR	2.6
E4	Active	4.0
	ARNG	5.6
	USAR	5.7
E5	Active	6.8
	ARNG	10.3
	USAR	9.2
E6	Active	9.9
	ARNG	16.9
	USAR	13.5
E7	Active	15.6
	ARNG	21.9
	USAR	17.0

Time in Grade. As with length of present service, Reserve Component specialists have served substantially longer in their present grades, once they become E4. Table D-5 displays specific information by grade.

Full-Time Support. Some full-time support for nondivisional logistics support units in the 63H specialty is provided by civilian technicians assigned to 63H military billets and by Army Guard/Reserve (AGR) enlisted 63H specialists. These full-time support people are normally required to mobilize and deploy with their units of assignment. While they represent a potentially valuable source of skill and experience for the support of training of the part-time Guard/Reserve incumbents in this specialty, it is not clear that that support occurs. The USAR does not require that technicians'

TABLE D-5. 63H INCUMBENT EXPERIENCE -- TIME IN GRADE

GRADE	COMPONENT	TIME IN GRADE (YRS)
E1-E3	Active	1.1
	ARNG	1.0
	USAR	1.5
E4	Active	1.3
	ARNG	3.1
	USAR	2.1
E5	Active	1.8
	ARNG	4.0
	USAR	3.3
E6	Active	1.9
	ARNG	5.0
	USAR	3.6
E7	Active	2.4
	ARNG	6.7
	USAR	4.5

military positions and full-time jobs be compatible. While the ARNG does require such a position compatibility, the National Guard Bureau's specific guidance to its technicians in the field normally allows for assignments to one of several dozen MOSs for each ARNG technician position. Thus, throughout the Reserve Component there is no real assurance of a skills match between the technician's full-time job and military position in which that person will deploy in wartime. Table D-6 shows the quantity of 63H military positions in the units studied which are occupied by full-time AGR and technician personnel.

THE TRAINING PROGRAM

Apprentice Training

Standard Army Basic Training (BT) of seven weeks for all logistics soldiers is followed for 63H-bound soldiers by an Advanced Individual Training (AIT) course of eight weeks, conducted at the U.S. Army Ordnance Center and School at Aberdeen Proving Grounds, Maryland. That training teaches the soldier to perform approximately 73 percent of the tasks required for fully

TABLE D-6. 63H FULL-TIME SUPPORT[1] FOR GUARD/RESERVE
(Nondivisional Logistics Units)

GRADE	AUTHORIZED	FULL-TIME SUPPORT	
		Assigned	Percent of Authorized
E3	557	3	1
E4	850	9	1
E5	523	60	11
E6	687	252	37
E7	788	333	42
Total	3,405	657	19

[1]Does not include Active Component advisors or Department of the Army civilian clerical employees.

satisfactory performance of apprenticeship skills. The remainder of the apprentice (Skill Level (SL)1) tasks is taught by the unit of initial assignment. The MOS 63H10 is awarded upon satisfactory completion of AIT.

In 1982, the U.S. Army Ordnance Center and School completed and distributed a reconfiguration for Reserve Component soldiers of the resident AIT course. The audience for this publication is made up primarily of those Reserve Component soldiers with prior military service in other specialties who are not able to attend the basic MOS-producing course for 63H. The reconfigured course contains 240 hours of instruction (160 hours of inactive duty for training, 80 hours of active duty for training), which is an abbreviation of the standard eight-week course. In general, the number of hours allocated to technical training in the configured course is equal to the technical training hours in the resident course.

Journeyman Training/Sustainment Training

Once the new 63H10 reaches the unit of initial assignment, sustainment training of apprentice skills begins, along with the acquisition of journeyman (SL2) skills. The vehicle is OJT, conducted by the more senior and experienced 63H technicians in the unit. No Primary Technical Course (PTC) exists for residence training of journeyman skills in the 63H specialty. The 63H soldier and his/her supervisors use the appropriate Soldier's Manual, Job Book, and Trainer's Guide as aids in accomplishing this training.

Masters Training

The preferred method for accomplishing this training is the 11-week, 3-day Basic Technical Course (BTC) (11 weeks for Active Component soldiers) conducted at the U.S. Army Ordnance Center and School. Those 63H20 soldiers unable to attend this course must acquire master skills by means of continued OJT, using the SL3 Soldier's Manual and Trainer's Guide. For merging purposes, the 63H30 Soldier's Manual requires that the technician preparing for mastery in this specialty know how to perform all tasks contained in the 63W1/2 (Wheel Vehicle Repairer) and 63G1/2 (Fuel and Electrical Systems Repairer) Soldier's Manuals.

BTC training seats for track vehicle repairers are offered to ARNG and USAR soldiers annually, but the soldier's record of attendance is limited. Table D-7 shows the scheduling and attendance history of this course since FY82 began.

TABLE D-7. BTC SCHEDULING AND ATTENDANCE FOR 63H SPECIALISTS
(Training Seats)

COMPONENT	FY82		FY83		FY84
	SCHD[1]	Attended	SCHD[1]	Attended	SCHD[1]
Active	340	420	340	232	300
ARNG	5	5	0	4	2
USAR	15	1	24	0	45

[1]Scheduled.

APPENDIX E

ARMY AIRCRAFT POWERPLANT REPAIRER

SPECIALITY: 68B (Military Occupation Specialty (MOS)).

TITLE: Aircraft Powerplant Repairer.

PHYSICAL DEMAND RATING: Moderately Heavy.

QUALIFICATIONS FOR AWARD OF MOS

General

The following general qualifications must be met to be awarded an MOS.

- successful completion of 68B Advanced Individual Training (AIT);
- a score of 100 or higher on the Mechanical Maintenance (MM) aptitude area of the Armed Services Vocational Aptitude Battery (ASVAB);
- physical profile of at least 222222;
- normal color vision;
- absence of any history of alcohol or drug abuse as defined in Army Regulation (AR) 611-201.

Additional Skill Identifiers (ASIs)[1]

E6: Engine maintenance on Lighter Air Cushion Vehicle (LACV-30), taught in an unnumbered NETT course, Vehicle Operator/Maintenance LACV, at the U.S. Army Transportation School, Ft. Eustis, Virginia. This ASI course lasts 15 weeks and 3 days.

---

[1]ASIs are specialized skills, qualifications, and requirements closely related to, but in addition to, those inherent in the MOS. ASIs generally require special schooling and may be awarded to individual soldiers or identified with a specific organizational position requiring special qualifications.

X1: Advanced attack helicopter maintenance, taught in an unnumbered and untitled course at Ft. Gordon, Georgia. This ASI course lasts 120 hours.

THE JOB

General

The Army aircraft powerplant repairer repairs aircraft turbine engines, propellers, and engine components. In senior positions, the 68B specialist also supervises and inspects this work as it is performed by others.

As an apprentice, the aircraft powerplant repairer often works under the supervision of others with more experience, but may work independently as an E4 (SP4) in units authorized only one 68B position. Principal duties involve removing, cleaning, adjusting, and testing turbine engines and their components, but also includes repairing and reassembling those systems as well -- all according to technical directions and manuals. This specialist assists in diagnostic work on engines and in rigging engine controls, and performs limited operational checks. The 68B apprentice is also responsible for maintaining shop and bench stock for engine repair and for using and maintaining tools needed for his/her work.

The journeyman aircraft powerplant repairer supervises apprentices and performs more complex and independent work than that expected of apprentices.

At the master level, this specialist plans work flow, exercises quality and production control over the work of subordinates, and supervises and evaluates the work performance of others. Final inspection evaluation of engines and propeller systems is the responsibility of this technician, as is the determination of effort and parts required for a number of repair jobs. The master aircraft powerplant repairer coordinates assignments, assigns

duties, guides others in malfunction diagnosis, and conducts technical training in aircraft powerplant repair and maintenance.

Units of Assignment

Thirty-eight percent of all aircraft powerplant repairer positions in the Army are contained in the combat divisions and separate brigades. An additional 38 percent belong to maintenance and other Tables of Organization and Equipment support units located at the rear of the divisions. Another five percent are part of the Tables of Distribution and Allowances for installations and similar enterprises, while only two percent of these personnel spaces are assigned to the new LACV-30 units of the Army. This latter proportion will grow somewhat as limited quantities of the new LACV-30 equipment are distributed to the force.

Peactime versus Wartime

While the Army presently utilizes a number of different aircraft powerplants, the peacetime maintenance workload for the typical 68B technician includes repair of only a portion of these. The Army Aviation Logistics Center powerplant specialists consider these engine systems (with the exception of the LACV-30 system) to be so similar, however, that little difficulty is foreseen in the maintenance of additional systems due to wartime assignment requiring realignment of support-to-supported relationships.

Implications of Force Modernization

Two new systems, the LACV-30 and the Army attack helicopter AH-64A, offer the greatest immediate challenges to aircraft powerplant repairers from a force modernization perspective. Both are the subject of ASI training. To the extent that 68B technicians in the Guard/Reserve attend these ASI courses (and maintain the skills learned there) in the quantities required for appropriate unit wartime performances, the impact of these new systems upon this technical specialty will be minimized.

Career Progression/Merging

The Army aircraft powerplant repairer serves as an apprentice through grade E4 (SP4). Journeyman skills call for the grade of E5 (SGT). As this specialist becomes more proficient, he/she may be assigned as an E6 (SSG) aircraft powerplant repairer in units or sections authorized at least six 68B positions. On the other hand, the E6 (SSG) position of assignment may be that of aircraft powerplant supervisor, for the supervision of 6 to 16 repairers. This specialty does not merge with any other specialty through the masters level.

THE INCUMBENT POPULATION

Personal Attributes

Age. Members of the Guard/Reserve assigned to this specialty are older at all grade levels than their Active Army counterparts as shown by the information in Table E-1.

TABLE E-1. 68B INCUMBENT PERSONAL ATTRIBUTES -- AVERAGE AGE

GRADE	COMPONENT	MEAN AGE (YRS)
E1-E3	Active	21.5
	ARNG	22.0
	USAR	22.6
E4	Active	24.0
	ARNG	27.0
	USAR	28.5
E5	Active	26.0
	ARNG	31.1
	USAR	34.0
E6	Active	32.8
	ARNG	37.9
	USAR	38.0
E7	Active	NDA[1]
	ARNG	NDA
	USAR	34.3

[1]No data available.

Aptitude Area Scores. The 68B specialist is required to achieve a score of at least 100 on the MM aptitude area of the ASVAB. The scores of Guard/Reserve 68B specialists in the study population are somewhat higher across all enlisted grades than those of their Active Component counterparts. Table E-2 displays this information.

TABLE E-2. 68B INCUMBENT PERSONAL ATTRIBUTES -- AVERAGE ASVAB APTITUDE AREA (MM) SCORES

GRADE	COMPONENT	MEAN SCORE
E1-E3	Active	110.6
	ARNG	113.8
	USAR	111.2
E4	Active	106.1
	ARNG	109.9
	USAR	111.0
E5	Active	105.5
	ARNG	111.4
	USAR	113.4
E6	Active	118.0
	ARNG	122.5
	USAR	120.0
E7	Active	NDA[1]
	ARNG	NDA
	USAR	NDA
Total	Active	107.9
	ARNG	111.7
	USAR	111.6

[1]No data available.

Civilian Education Completed. At the lower enlisted grades (E1 through E4), a large portion of the Reserve Component 68B population have not graduated from high school, when compared with Active Army 68B specialists of the same grade. On the other hand, a higher proportion of Reserve Component than Active Component soldiers in this specialty have completed some college work. Table E-3 contains information on civilian education completed.

TABLE E-3. 68B INCUMBENT PERSONAL ATTRIBUTES -- CIVILIAN EDUCATION COMPLETED
(Percentage of Total)

GRADE	COMPONENT	NON-GRADUATE[1]	GED[2]	HSDG[3]	SOME COLLEGE[4]
E1-E3	Active	4.4	NDA[5]	95.6	NDA
	ARNG	25.0	8.3	66.7	NDA
	USAR	46.2	20.5	28.2	5.1
E4	Active	8.5	NDA	85.1	6.4
	ARNG	13.0	NDA	60.9	26.1
	USAR	27.3	NDA	59.1	4.5
E5	Active	2.1	NDA	95.8	2.1
	ARNG	20.0	NDA	65.7	14.3
	USAR	8.3	4.2	75.0	12.5
E6	Active	NDA	NDA	86.2	13.8
	ARNG	5.6	5.6	61.1	27.8
	USAR	NDA	22.2	44.4	33.3
E7	Active	NDA	NDA	NDA	NDA
	ARNG	NDA	NDA	NDA	NDA
	USAR	NDA	NDA	NDA	NDA
Total	Active	4.1	NDA	91.1	4.7
	ARNG	15.9	2.3	63.6	18.2
	USAR	27.4	11.6	48.4	10.5

[1]Incumbents who have not graduated from high school.

[2]Incumbents who have completed high school through General Education Development (GED) equivalency.

[3]Incumbents who are high-school-diploma graduates but have no college work.

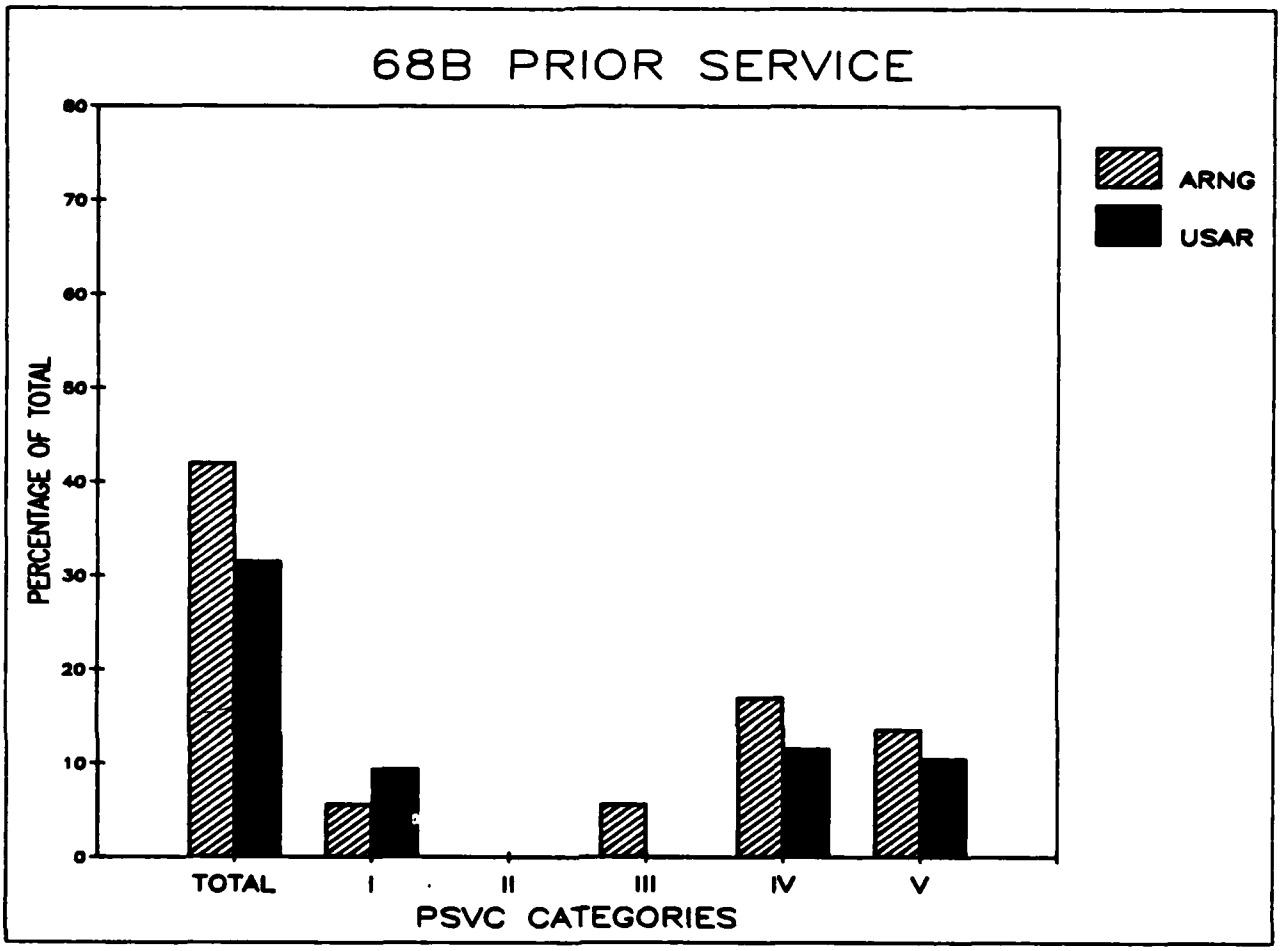
[4]Incumbents who have completed at least some college or university work.

[5]No data available.

Experience

Prior Military Service. The two aircraft repair specialties chosen for study, 68B and 68F, show the highest incidence of prior military service of any. Even so, the portion of 68B technicians having served in the Army as aircraft powerplant repairers is less than 10 percent of the total 68B study population. Figure E-1 contains this information.

FIGURE E-1. 68B INCUMBENT EXPERIENCE -- PRIOR MILITARY SERVICE



NOTE: The following are descriptions of prior-service categories (PSVC) shown in the figure: TOTAL -- percentage of incumbents having any type of prior military service (sum of Categories I through V); I -- percentage of incumbents having prior service in the Army in the same MOS; II -- percentage of incumbents having prior service in the Army, not in the same MOS, but in the same career field; III -- percentage of incumbents having prior service in another service and in the same career field; IV -- percentage of incumbents having prior service in the Army but not in the same career field; V -- percentage of incumbents having prior service in another service but not in the same career field.

Length of Present Service. Guard/Reserve aircraft powerplant repairers beyond grade E3 show longer length of service records than their Active Component counterparts, as shown in Table E-4.

TABLE E-4. 68B INCUMBENT EXPERIENCE -- LENGTH OF PRESENT MILITARY SERVICE

GRADE	COMPONENT	MEAN LENGTH OF SERVICE (YRS)
E1-E3	Active	1.8
	ARNG	1.9
	USAR	1.7
E4	Active	4.1
	ARNG	5.3
	USAR	5.5
E5	Active	6.5
	ARNG	8.4
	USAR	11.5
E6	Active	12.8
	ARNG	15.0
	USAR	13.8
E7	Active	NDA[1]
	ARNG	NDA
	USAR	16.0

[1]No data available.

Time in Grade. Length of service data in this specialty show uneven relationships. Army Guard 68B soldiers have served somewhat longer in their present grades, except for soldiers who are E6. Table E-5 displays specific information by grade.

Full-Time Support. Some full-time support for nondivisional logistics support units in the 68B specialty is provided by civilian technicians assigned to 68B military billets and by Active Guard/Reserve (AGR) enlisted 68B specialists. These full-time support people are normally required to mobilize and deploy with their units of assignment. While they represent a

TABLE E-5. 68B INCUMBENT EXPERIENCE -- TIME IN GRADE

GRADE	COMPONENT	TIME IN GRADE (YRS)
E1-E3	Active	0.6
	ARNG	7.3
	USAR	0.6
E4	Active	1.8
	ARNG	2.0
	USAR	1.5
E5	Active	2.0
	ARNG	5.0
	USAR	3.4
E6	Active	1.7
	ARNG	4.7
	USAR	2.0
E7	Active	NDA[1]
	ARNG	NDA
	USAR	2.1

[1]No data available.

potentially valuable source of skill and experience for the support of training of the part-time Guard/Reserve incumbents in this specialty, it is not clear that that support occurs. The USAR does not require that technicians' military positions and full-time jobs be compatible. While the ARNG does require such a position compatibility, the National Guard Bureau's specific guidance to its technicians in the field normally allows for assignments to one of several dozen MOSs for each ARNG technician position. Thus, throughout the Reserve Component there is no real assurance of a skills match between the technician's full-time job and military position in which that person will deploy in wartime. Table E-6 shows the quantity of 68B military positions in the units studied which are occupied by full-time AGR and technician personnel.

TABLE E-6. 68B FULL-TIME SUPPORT[1] FOR GUARD/RESERVE
(Nondivisional Logistics Units)

GRADE	AUTHORIZED	FULL-TIME SUPPORT	
		Assigned	Percent of Authorized
E3	156	0	0
E4	94	0	0
E5	117	3	3
E6	17	5	29
Total	384	8	2

[1]Does not include Active Component advisors or Department of the Army civilian clerical employees.

THE TRAINING PROGRAM

Apprentice Training

Following successful completion of Basic Training (BT) of seven-weeks duration, the soldier who is to become an aircraft powerplant repairer attends a resident AIT course of 17 weeks, 3 days at the U.S. Army Aviation Logistics Center and Transportation School at Ft. Eustis, Virginia. This training provides the knowledge and skills to perform almost all (88 percent) of the entry-level apprentice tasks associated with this specialty. The MOS 68B10 is awarded upon completion of AIT.

Journeyman Training/Sustainment Training

Upon reaching the unit of assignment after AIT, this specialist embarks upon the completion of apprentice (Skill Level (SL)1) training and sustains those skills once learned. He/she works toward the attainment of journeyman (SL2) skills as well, since no Primary Technical Course (PTC) exists for 68B SL2 preparation. The training utilized for both SL1 sustainment and SL2 attainment is OJT. This training is performed by the use of the

68B Soldier's Manual and Trainer's Guide, together with the specialist's Job Book.

Masters Training

Masters-level (SL3) training for this specialty is provided at Ft. Eustis by a resident Basic Technical Course (BTC). The present course lasts five weeks and three days, and is under revision for substantive change in FY85. Those 68B specialists unable to attend BTC acquire master skills through a continuation of OJT. No SL3 Soldier's Manual or Trainer's Guide presently exists in this specialty.

BTC training seats for aircraft powerplant repairers are offered to ARNG and USAR soldiers annually, but their record of attendance is limited. Table E-7 shows the scheduling and attendance history of this course since FY82 began.

TABLE E-7. BTC SCHEDULING AND ATTENDANCE FOR 68B SPECIALISTS
(Training Seats)

COMPONENT	FY82		FY83		FY84
	SCHD[1]	Attended	SCHD[1]	Attended	SCHD[1]
Active	28	25	24	36	20
ARNG	2	0	1	0	1
USAR	0	1	8	3	4

[1]Scheduled.

APPENDIX F

ARMY AIRCRAFT ELECTRICIAN

SPECIALTY: 68F (Military Occupation Specialty (MOS)).

TITLE: Aircraft Electrician.

PHYSICAL DEMAND RATING: Very Heavy.

QUALIFICATIONS FOR AWARD OF MOS

General

The following general qualifications must be met to be awarded an MOS.

- successful completion of 68F Advanced Individual Training (AIT);
- a score of 100 or higher on the Mechanical Maintenance (MM) aptitude area of the Armed Services Vocational Aptitude Battery (ASVAB);
- physical profile of at least 222222;
- normal color vision;
- absence of any history of alcohol or drug abuse as defined in Army Regulation (AR) 611-201.

Additional Skill Identifiers (ASIs)[1]

X1: Advanced attack helicopter maintenance, taught in an unnumbered and untitled course at Ft. Gordon, Georgia. This ASI course lasts 120 hours.

[1]ASIs are specialized skills, qualifications, and requirements closely related to, but in addition to, those inherent in the MOS. ASIs generally require special schooling and may be awarded to individual soldiers or identified with a specific organizational position requiring special qualifications.

THE JOB

General

The Army aircraft electrician maintains and repairs aircraft electrical systems, components, and instruments. In senior positions, the 68F specialist also supervises and inspects this work as it is performed by others.

As an apprentice, the aircraft electrician often works under the supervision of others with more experience but may work independently as an E4 (SP4) in units authorized only one 68F position. Principal duties involve diagnosis of electrical system malfunctions and repair of instrument systems, including the removal, installation, repair, and adjustment of assemblies and components -- all according to technical directives and manuals. This specialist checks the accuracy of aircraft instruments and services and repairs nickel-cadmium batteries. The apprentice aircraft electrician is also responsible for using and maintaining tools appropriate for his/her work.

The journeyman aircraft electrician supervises apprentices and performs more complex and independent work than that expected of the apprentice.

At the master level, this specialist plans work flow, exercises quality and production control over the work of subordinates, and supervises and evaluates the work performance of others. Final inspection evaluation of electrical systems and instruments is the responsibility of this master technician, as is the determination of effort and parts required for a number of repair jobs. The master aircraft electrician coordinates assignments, assigns duties, and conducts technical training in aircraft electrical repair and maintenance.

Units of Assignment

Thirty-six percent of all aircraft electrician positions in the Army are contained in combat divisions and separate brigades. An additional 26 percent belong to maintenance and other support units to the rear of the divisions. An additional 11 percent are part of the Tables of Distribution and Allowances for installations and similar enterprises. The remaining 27 percent of these positions are scattered throughout small Tables of Organization and Equipment units of the Army.

Peacetime versus Wartime

Present 68F training and skill development concentrates on the electrical and instrumentation systems of three Army helicopters (UH-1, UH-60, and CH-47D). However, peacetime on-the-job training (OJT) is apt to involve only one of those systems. Any change in support-to-supported equipment relationships brought on by wartime deployment of helicopter maintenance units would have an impact on the ability of 68F technicians to perform their duties effectively.

Implications of Force Modernization

One new system, the Army attack helicopter AH-64A, offers the greatest challenge to aircraft electricians from a force modernization perspective. This new system is the subject of ASI training. To the extent that 68F technicians in the Guard/Reserve attend this ASI course in the quantities required for appropriate unit performance, the impact of this new system upon this technical specialty is minimized.

Career Progression/Merging

The Army aircraft electrician serves as an apprentice through grade E4 (SP4). Journeyman skills call for the grade of E5 (SGT). As this specialist becomes more proficient, he/she is assigned as an E6 (SSG) aircraft

electrician in units or sections authorized at least four 68F positions. The master aircraft electrician supervises the electrical maintenance work of others in that unit or section. This specialty does not merge with any other specialty through the master level.

THE INCUMBENT POPULATION[2]

Personal Attributes

Age. Reserve Component aircraft electricians are older than Active Component aircraft electricians. Table F-1 displays this information.

TABLE F-1. 68F INCUMBENT PERSONAL ATTRIBUTES -- AVERAGE AGE

GRADE	COMPONENT	MEAN AGE (YRS)
E1-E3	Active	21.2
	ARNG	27.7
	USAR	24.9
E4	Active	24.3
	ARNG	24.5
	USAR	33.9
E5	Active	29.0
	ARNG	32.7
	USAR	33.7
E6	Active	34.9
	ARNG	40.7
	USAR	35.5

[2]Total study population of the 68F specialty in the Guard/Reserve is very small. Care should be exercised in drawing conclusions based on any single population cell.

Aptitude Area Scores. This specialist is required to achieve a score of at least 100 on the MM aptitude area of the ASVAB as shown by the information in Table F-2.

TABLE F-2. 68F INCUMBENT PERSONAL ATTRIBUTES -- AVERAGE ASVAB APTITUDE AREA (MM) SCORES

GRADE	COMPONENT	MEAN SCORE
E1-E3	Active	108.5
	ARNG	104.9
	USAR	103.6
E4	Active	107.2
	ARNG	108.4
	USAR	118.0
E5	Active	100.8
	ARNG	127.7
	USAR	115.5
E6	Active	NDA[1]
	ARNG	NDA
	USAR	124.0
E7	Active	NDA
	ARNG	NDA
	USAR	NDA
Total	Active	105.8
	ARNG	109.9
	USAR	113.1

[1]No data available.

Civilian Education Completed. For data on civilian education completed see Table F-3.

Experience

Prior Military Service. For data on prior military service see Figure F-1.

TABLE F-3. 68F INCUMBENT PERSONAL ATTRIBUTES -- CIVILIAN EDUCATION COMPLETED
(Percentage of Total)

GRADE	COMPONENT	NON-GRADUATE[1]	GED[2]	HSDG[3]	SOME COLLEGE[4]
E1-E3	Active	15.0	NDA[5]	85.0	NDA
	ARNG	27.3	NDA	72.7	NDA
	USAR	50.0	NDA	37.5	NDA
E4	Active	5.0	NDA	85.0	10.0
	ARNG	NDA	10.0	80.0	10.0
	USAR	NDA	NDA	88.9	11.1
E5	Active	NDA	NDA	100.0	NDA
	ARNG	NDA	NDA	70.0	30.0
	USAR	NDA	NDA	66.7	33.3
E6	Active	NDA	NDA	100.0	NDA
	ARNG	NDA	NDA	100.0	NDA
	USAR	NDA	NDA	75.0	25.0
E7	Active	NDA	NDA	NDA	NDA
	ARNG	NDA	NDA	NDA	NDA
	USAR	NDA	NDA	NDA	NDA
Total	Active	6.2	NDA	90.8	3.1
	ARNG	8.6	2.9	77.1	11.4
	USAR	14.8	NDA	66.7	14.8

[1]Incumbents who have not graduated from high school.

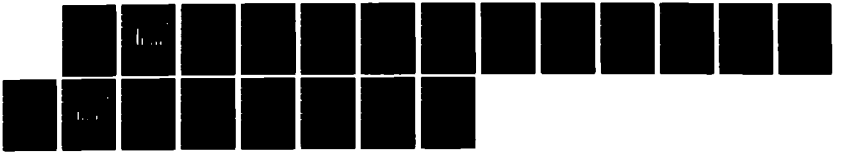
[2]Incumbents who have completed high school through General Education Development (GED) equivalency.

[3]Incumbents who are high-school-diploma graduates but have no college work.

[4]Incumbents who have completed at least some college or university work.

[5]No data available.

AD-A168 556 TECHNICAL SKILL TRAINING IN THE ARMY RESERVE COMPONENTS 2/2
(U) LOGISTICS MANAGEMENT INST BETHESDA MD
E D SIMMS ET AL. SEP 84 LMI-RA401-1 MDA903-81-C-00166
UNCLASSIFIED F/G 15/5 NL



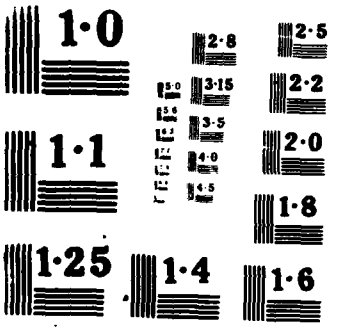
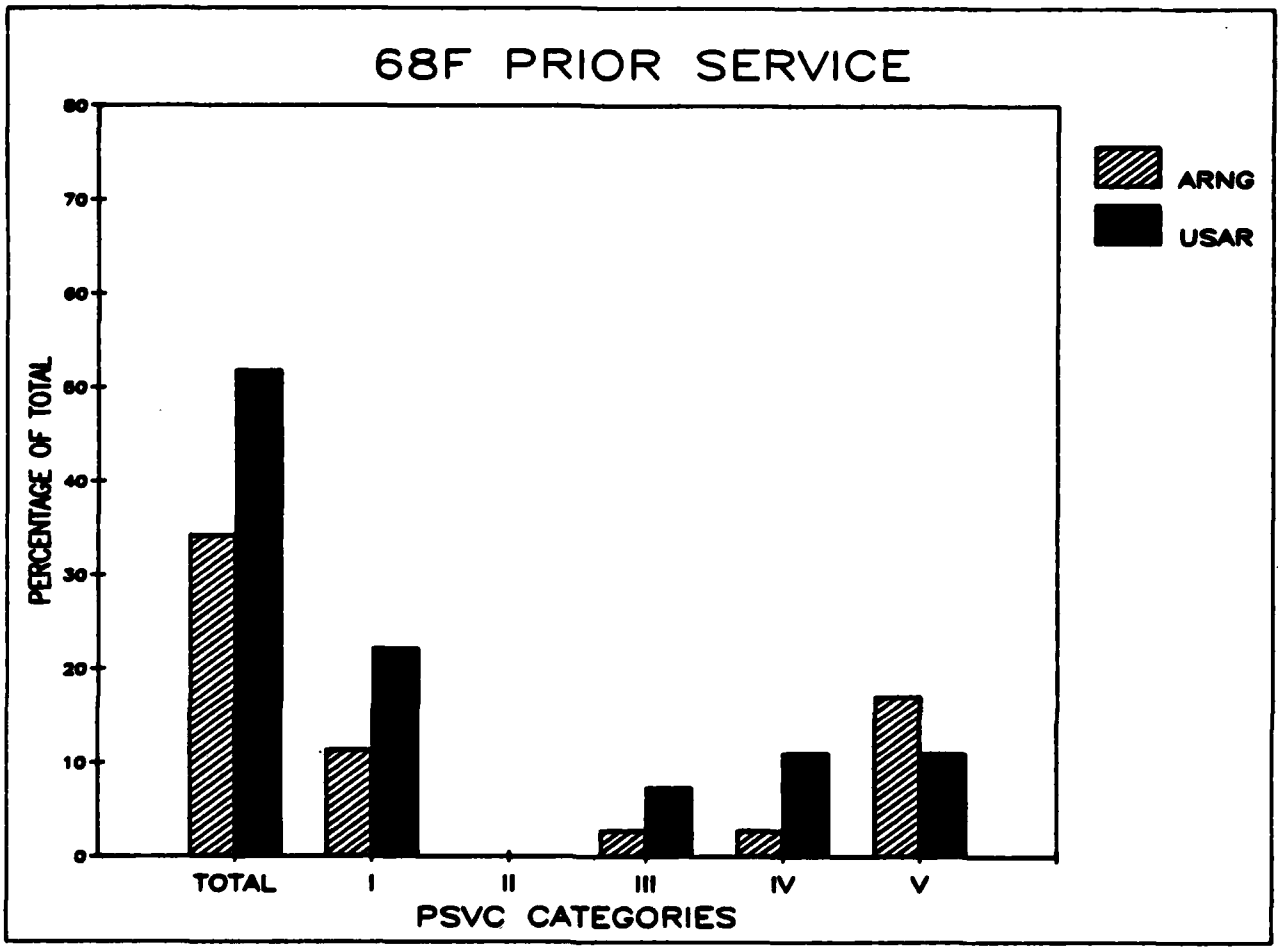


FIGURE F-1. 68F INCUMBENT EXPERIENCE -- PRIOR MILITARY SERVICE



NOTE: The following are descriptions of prior-service categories (PSVC) shown in the figure: TOTAL -- percentage of incumbents having any type of prior military service (sum of Categories I through V); I -- percentage of incumbents having prior service in the Army in the same MOS; II -- percentage of incumbents having prior service in the Army, not in the same MOS, but in the same career field; III -- percentage of incumbents having prior service in another service and in the same career field; IV -- percentage of incumbents having prior service in the Army but not in the same career field; V -- percentage of incumbents having prior service in another service but not in the same career field.

Length of Present Service. For data on length of present service see Table F-4.

TABLE F-4. 68F INCUMBENT EXPERIENCE -- LENGTH OF PRESENT MILITARY SERVICE

GRADE	COMPONENT	MEAN LENGTH OF SERVICE (YRS)
E1-E3	Active	1.9
	ARNG	4.7
	USAR	2.5
E4	Active	4.2
	ARNG	4.5
	USAR	5.7
E5	Active	7.8
	ARNG	9.7
	USAR	10.0
E6	Active	15.0
	ARNG	17.8
	USAR	12.9

Time in Grade. For data on time in grade see Table F-5.

TABLE F-5. 68F INCUMBENT EXPERIENCE -- TIME IN GRADE

GRADE	COMPONENT	TIME IN GRADE (YRS)
E1-E3	Active	0.3
	ARNG	2.2
	USAR	0.6
E4	Active	1.4
	ARNG	2.2
	USAR	1.8
E5	Active	2.5
	ARNG	3.2
	USAR	2.6
E6	Active	5.1
	ARNG	2.5
	USAR	2.0

Full-Time Support. Some full-time support for nondivisional logistics support units in the 68F specialty is provided by civilian technicians assigned to 68F military billets and by Active Guard/Reserve (AGR) enlisted 68F specialists. These full-time support people are normally required to mobilize and deploy with their units of assignment. While they represent a potentially valuable source of skill and experience for the support of training of the part-time Guard/Reserve incumbents in this specialty, it is not clear that that support occurs. The USAR does not require that technicians' military positions and full-time jobs be compatible. While the ARNG does require such a position compatibility, the National Guard Bureau's specific guidance to its technicians in the field normally allows for assignments to one of several dozen MOSs for each ARNG technician position. Thus, throughout the Reserve Component there is no real assurance of a skills match between the technician's full-time job and military position in which that person will deploy in wartime. Table F-6 shows the quantity of 68F military positions in the units studied occupied by full-time AGR and technician personnel.

TABLE F-6. 68F FULL-TIME SUPPORT[1] FOR GUARD/RESERVE
(Nondivisional Logistics Units)

GRADE	AUTHORIZED	FULL-TIME SUPPORT	
		Assigned	Percent of Authorized
E3	14	0	0
E4	57	1	2
E5	33	0	0
E6	0	2	0
Total	104	3	3

[1]Does not include Active Component advisors or Department of the Army civilian clerical employees.

THE TRAINING PROGRAM

Apprentice Training

Following successful completion of Basic Training (BT) of seven-weeks duration, the soldier who is to become an aircraft electrician attends a resident AIT course of 24 weeks, 3 days at the U.S. Army Aviation Logistics Center and Transportation School at Ft. Eustis, Virginia. This training provides the knowledge and skills to perform almost all (88 percent) of the entry-level apprentice tasks associated with this specialty. The MOS 68F10 is awarded upon completion of AIT.

Journeyman Training/Sustainment Training

Upon reaching the unit of assignment after AIT, this specialist embarks upon apprentice (Skill Level (SL)1) sustainment training, and works toward the attainment of journeyman (SL2) skills as well, since no Primary Technical Course (PTC) exists for 68F SL2 preparation. The training utilized for both SL1 sustainment and SL2 attainment is OJT. This training is performed by the use of the 68F Soldier's Manual and Trainer's Guide, together with the specialist's Job Book.

Masters Training

Masters-level (SL3) training for this specialty is provided at Ft. Eustis by a resident Basic Training Course (BTC). The present course lasts five weeks and three days, and is under revision for substantive change in FY85. Those 68F specialists unable to attend BTC acquire master skills through a continuation of OJT. No SL3 Soldier's Manual or Trainer's Guide presently exists for this specialty.

BTC training seats for aircraft electricians are offered to ARNG and USAR soldiers annually, but their record of attendance is limited. Table F-7 shows the scheduling and attendance history of this course since FY82 began.

TABLE F-7. BTC SCHEDULING AND ATTENDANCE FOR 68F SPECIALISTS
(Training Seats)

COMPONENT	FY82		FY83		FY84
	SCHD[1]	Attended	SCHD[1]	Attended	SCHD[1]
Active	18	13	15	16	10
ARNG	2	0	2	0	2
USAR	1	0	4	0	4

[1]Scheduled.

APPENDIX G

ARMY MATERIEL CONTROL AND ACCOUNTING SPECIALIST

SPECIALTY: 76P (Military Occupation Specialty (MOS)).

TITLE: Materiel Control and Accounting Specialist.

PHYSICAL DEMAND RATING: Heavy.

QUALIFICATIONS FOR AWARD OF MOS

General

The following general qualifications must be met to be awarded an MOS.

- successful completion of 76P Initial Entry Training (IET);
- a score of 90 or higher on the Clerical (CL) aptitude area of the Armed Services Vocational Aptitude Battery (ASVAB);
- physical profile of at least 222332.

Additional Skill Identifiers (ASIs)[1]

F3: Standard Army Intermediate Level Supply Subsystem (SAILS), taught in Course 551-ASIF3, SAILS ABX, at the U.S. Army Logistics Center, Ft. Lee, Virginia. This ASI course lasts four weeks.

F9: Automated Supply Recordkeeping and Supply Management, taught in Course 551-ASIF4/F9 Phase II, Division Logistics System (DLOGS), at the U.S. Army Logistics Center, Ft. Lee, Virginia. This ASI course lasts three weeks.

---

[1]ASIs are specialized skills, qualifications, and requirements closely related to, but in addition to, those inherent in the MOS. ASIs generally require special schooling and may be awarded to individual soldiers or identified with a specific organizational position requiring special qualifications.

M6: Computer Operations (DAS3), taught in Course 8B-F39/551/ASI M6, DAS3/DS4 Operator Course, at the U.S. Army Logistics Center, Ft. Lee, Virginia. This ASI course lasts six weeks and three days.

T8: DS4/Direct Support Unit Standard Supply System, taught in Course 8B-F37/551-ASI T8, Direct Support Unit Supply System (DS4), at the U.S. Army Logistics Center, Ft. Lee, Virginia. This ASI course lasts five weeks.

U4: Property Disposal, taught in Course 8GF1, Defense Property Disposal Operations, at the U.S. Army Logistics Center, Ft. Lee, Virginia. This ASI course lasts four weeks. The ASI may also be acquired through on-the-job training (OJT).

U5: Commissary Operations, taught in Course SG-82D/551-F2, Commission Management, at the U.S. Army Quartermaster School. This ASI course lasts six weeks.

Another ASI(U8), related to the DAS3/PHOENIX system still in use in Europe, is pertinent to the Active Component of the Army. Since no Reserve Component soldiers are assigned to work with this obsolescent system, it is not considered further in this study.

THE JOB

General

The Army materiel control and accounting specialist controls and accounts for materiel in five of the Army's ten classes of supply.[2] The accounting function is performed by 76P soldiers of lower-skill levels, while control responsibilities are exercised by more experienced specialists.

---

[2]Class II: clothing, individual equipment, tentage, tool sets, administrative supplies, etc.; Class IV: construction materials; Class VI: personal demand items (non-military); Class VII: major end items; and Class IX: repair parts and components.

As an apprentice, this technician accomplishes entry-level tasks in materiel accounting, editing, document control, stock record-keeping, sales, and direct exchange functions. In doing so, the materiel control and accounting specialist must operate office machines and data processing equipment, work in technical libraries, maintain and review lists and records, and compute and post adjustments to stockage and exchange lists. These functions may or may not be performed under supervision, depending upon the size and complexity of the supply operations of the unit.

At the journeyman level, this specialist provides technical assistance to those of lesser skill and performs more complex tasks in all of the work of the apprentice, exercising stock control and inventory adjustment responsibilities for the first time.

The master technician in this specialty acts often as a supervisor of groups or teams of subordinates in all of the above functions. In addition, the master bears responsibilities in Army purchasing and contracting and in commodity management.

Units of Assignment

The 76P represents the largest group of logistics technicians reviewed in this study. As might be anticipated from the job they perform, these specialists are found in a greater number and variety of Army units than any of the other specialties chosen for study. Fully 32 percent of the 76P positions are located in the supply, maintenance, and transportation units of the corps and theater armies. Another large group, 20 percent, is found in the Tables of Distribution and Allowances of depots, installations, and similar activities. Eighteen percent of the Army's materiel control and accounting specialists are assigned to the combat divisions and separate brigades, while the next group of any significant size, five percent, is

located in Army missile units and their dedicated maintenance support. Three percent of the 76P positions of the Army are found in engineer cartography companies, heavy construction battalions, etc.

Peacetime versus Wartime

The impact of mobilization and wartime operation upon the 76P specialists of the Guard/Reserve is largely dependent upon the nature and type of the supply system into which each Reserve Component support unit manned with 76P specialists moves as part of its wartime deployment and utilization scenario. If, for example, a nondivisional direct support maintenance company from the USAR were to deploy tomorrow to Europe under a European scenario, there is some chance that the supply system encountered would be based upon the DAS3/PHOENIX modification of the National Cash Register 500 system (G3) utilizing Honeywell hardware. While the DAS3/PHOENIX arrangement is still operational in Europe, virtually no Guard/Reserve 76P specialists have been exposed to that system.

Implications of Force Modernization

The modernization of the weapon systems of the force increases the present workload of the 76P specialist because of changes in the quantity of line items handled, because of component complexity, and perhaps because of interchangeability/direct exchange options. The "force modernization" of the data processing support equipment of the several supply systems, on the other hand, carries significant impact for the materiel control and accounting specialist. The existence of some seven ASIs for the 76P specialty is evidence of the training problems accompanying the modernization of data processing equipment.

Career Progression/Merging

This technician serves as an apprentice through the grade E4 (SP4). Unit positions appropriate to the apprentice are materiel control and

accounting specialist or sales cashier. At the journeyman (E5 SP5) level, position titles are the same. Once experience and skill dictate the selection of this specialist as a master, he/she may hold one of five positions as an E6 (SSG):

- Sales Supervisor;
- Materiel Control Supervisor;
- Property Disposal Supervisor;
- Purchasing and Contracting Sergeant;
- Materiel Management Non-Commissioned Officer.

No merging of the 76P with other specialties occurs through the master technical level.

THE INCUMBENT POPULATION

Personal Attributes

Age. 76P specialists of the Reserve Component are older than their Active Component counterparts. Table G-1 displays this information.

TABLE G-1. 76P INCUMBENT PERSONAL ATTRIBUTES -- AVERAGE AGE

GRADE	COMPONENT	MEAN AGE (YRS)
E1-E3	Active	21.4
	ARNG	22.6
	USAR	22.3
E4	Active	24.0
	ARNG	27.8
	USAR	28.1
E5	Active	28.2
	ARNG	34.4
	USAR	33.6
E6	Active	32.2
	ARNG	39.5
	USAR	38.0
E7	Active	37.3
	ARNG	42.8
	USAR	40.5

Aptitude Area Scores. These technicians are required to achieve a score of at least 90 in the CL aptitude area of the ASVAB. Scores among specialists of the two components are mixed. Table G-2 displays these scores.

TABLE G-2. 76P INCUMBENT PERSONAL ATTRIBUTES -- AVERAGE ASVAB APTITUDE AREA (CL) SCORES

GRADE	COMPONENT	MEAN SCORE
E1-E3	Active	99.9
	ARNG	94.7
	USAR	99.0
E4	Active	93.1
	ARNG	97.5
	USAR	95.6
E5	Active	97.3
	ARNG	98.4
	USAR	100.3
E6	Active	98.4
	ARNG	93.5
	USAR	103.4
E7	Active	111.0
	ARNG	123.0
	USAR	111.8

Civilian Education Completed. Reserve Component specialists in all grades of this field show a higher proportion of non-high-school graduates, but they also show a greater proportion of specialists who have completed some college work, when compared to the Active Component counterpart population. Table G-3 contains information on civilian education completed.

Experience

Prior Military Service. Fewer than 20 percent of the 76P specialists of the Reserve Component have had prior military service of any kind. Fewer than 10 percent have had prior Army service in the same field or specialty. Figure G-1 contains this information.

TABLE G-3. 76P INCUMBENT PERSONAL ATTRIBUTES -- CIVILIAN EDUCATION COMPLETED
(Percentage of Total)

GRADE	COMPONENT	NON-GRADUATE[1]	GED[2]	HSDG[3]	SOME COLLEGE[4]
E1-E3	Active	7.3	NDA[5]	88.2	4.5
	ARNG	26.6	4.2	63.6	5.6
	USAR	28.9	15.5	51.8	3.5
E4	Active	8.4	NDA	86.2	5.2
	ARNG	18.7	1.1	69.3	10.9
	USAR	15.9	8.8	57.9	12.1
E5	Active	4.3	NDA	87.6	8.0
	ARNG	6.2	4.3	65.9	23.6
	USAR	9.7	7.6	59.0	22.7
E6	Active	0.3	NDA	87.4	12.3
	ARNG	4.2	0.8	67.9	27.0
	USAR	1.9	5.0	60.9	31.7
E7	Active	NDA	NDA	80.7	19.3
	ARNG	5.3	1.1	70.2	23.4
	USAR	1.1	4.9	51.4	42.6
Total	Active	5.2	NDA	86.3	8.4
	ARNG	12.3	2.3	67.4	18.0
	USAR	16.8	10.3	55.3	15.9

[1]Incumbents who have not graduated from high school.

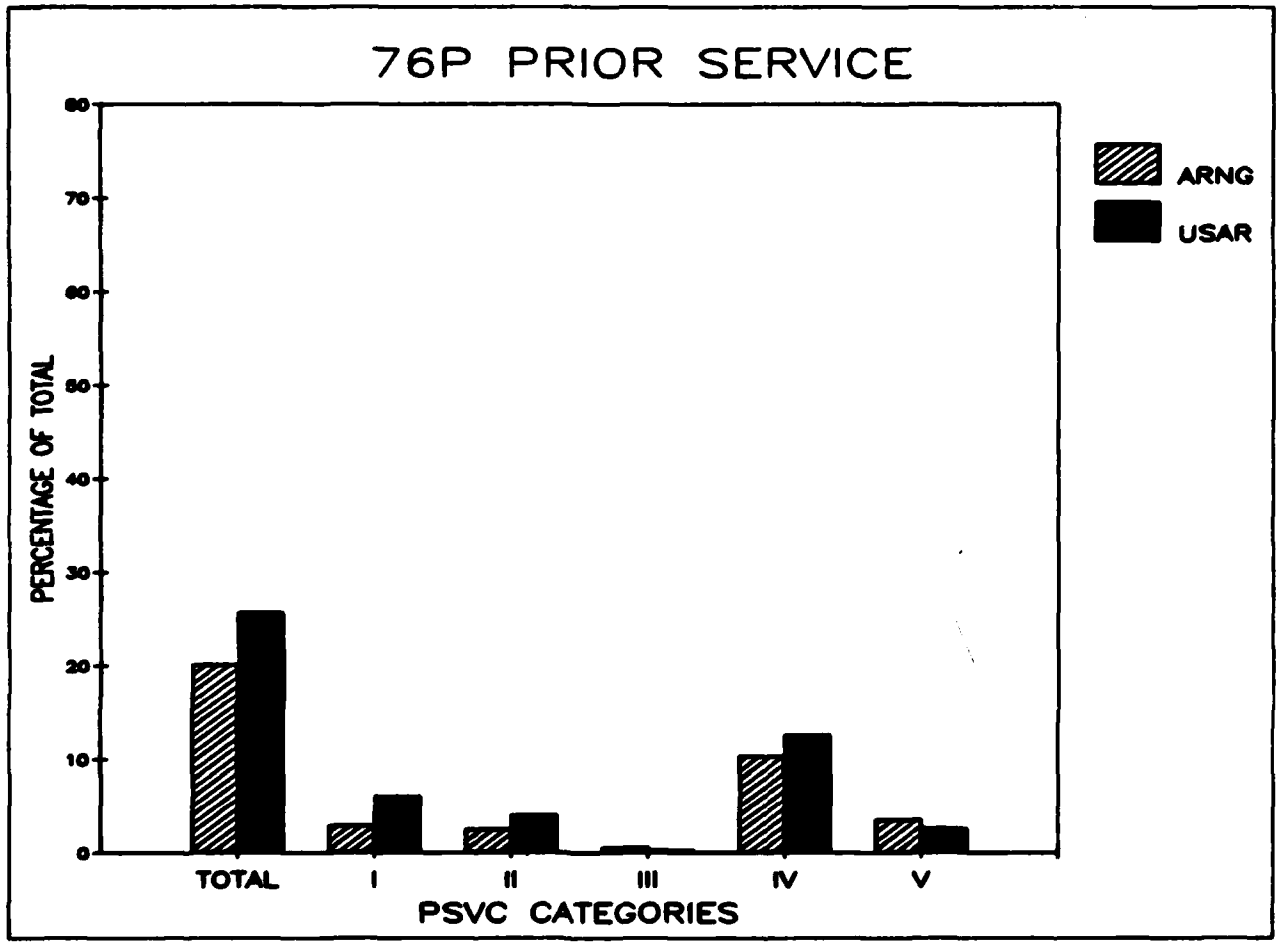
[2]Incumbents who have completed high school through General Education Development (GED) equivalency.

[3]Incumbents who are high-school-diploma graduates but have no college work.

[4]Incumbents who have completed at least some college or university work.

[5]No data available.

FIGURE G-1. 76P INCUMBENT EXPERIENCE -- PRIOR MILITARY SERVICE



NOTE: The following are descriptions of prior-service categories (PSVC) shown in the figure: TOTAL -- percentage of incumbents having any type of prior military service (sum of Categories I through V); I -- percentage of incumbents having prior service in the Army in the same MOS; II -- percentage of incumbents having prior service in the Army, not in the same MOS, but in the same career field; III -- percentage of incumbents having prior service in another service and in the same career field; IV -- percentage of incumbents having prior service in the Army but not in the same career field; V -- percentage of incumbents having prior service in another service but not in the same career field.

Length of Present Service. Most Reserve Component 76P specialists have greater length of present service than their Active Component counterparts (USAR E7 specialists are an exception) as shown in Table G-4.

TABLE G-4. 76P INCUMBENT EXPERIENCE -- LENGTH OF PRESENT MILITARY SERVICE

GRADE	COMPONENT	MEAN LENGTH OF SERVICE (YRS)
E1-E3	Active	1.7
	ARNG	2.2
	USAR	1.9
E4	Active	4.1
	ARNG	5.7
	USAR	6.3
E5	Active	7.7
	ARNG	10.2
	USAR	10.2
E6	Active	11.8
	ARNG	15.2
	USAR	13.3
E7	Active	17.3
	ARNG	20.2
	USAR	17.0

Time in Grade. Time-in-grade experience by Reserve Component 76P specialists is greater than that of the Active Component group in all enlisted grades. Table G-5 displays specific information by grade.

Full-Time Support. Some full-time support for nondivisional logistics support units in the 76P specialty is provided by civilian technicians assigned to 76P military billets and by Active Guard/Reserve (AGR) enlisted 76P specialists. These full-time support people are normally required to mobilize and deploy with their units of assignment. While they represent a potentially valuable source of skill and experience for the support of training of the part-time Guard/Reserve incumbents in this specialty, it is not clear that that support occurs. The USAR does not require that technicians'

TABLE G-5. 76P INCUMBENT EXPERIENCE -- TIME IN GRADE

GRADE	COMPONENT	TIME IN GRADE (YRS)
E1-E3	Active	0.6
	ARNG	2.3
	USAR	1.3
E4	Active	1.8
	ARNG	3.0
	USAR	4.9
E5	Active	2.2
	ARNG	3.9
	USAR	3.5
E6	Active	2.1
	ARNG	4.0
	USAR	4.4
E7	Active	2.9
	ARNG	6.5
	USAR	4.4

military positions and full-time jobs be compatible. While the ARNG does require such a position compatibility, the National Guard Bureau's specific guidance to its technicians in the field normally allows for assignments to one of several dozen MOSs for each ARNG technician position. Thus, throughout the Reserve Component there is no real assurance of a skills match between the technician's full-time job and military position in which that person will deploy in wartime. Table G-6 shows the quantity of 76P military positions in the units studied occupied by full-time AGR and technician personnel.

THE TRAINING PROGRAM

Apprentice Training

After completing the standard seven-week Basic Training (BT) course, the soldier destined to become a specialist in this field attends an Advanced Individual Training (AIT) course of eight weeks at the U.S. Army competence in all 82 tasks associated with satisfactory performance of duty as an apprentice (Skill Level (SL)1) materiel control and accounting specialist. The MOS 76P10 is awarded upon completion of AIT.

TABLE G-6. 76P FULL-TIME SUPPORT[1] FOR GUARD/RESERVE
(Nondivisional Logistics Units)

GRADE	AUTHORIZED	FULL-TIME SUPPORT	
		Assigned	Percent of Authorized
E3	610	1	0
E4	1,400	18	1
E5	689	46	7
E6	421	94	22
E7	553	86	16
Total	3,673	245	7

[1]Does not include Active Component advisors or Department of the Army civilian clerical employees.

Journeyman Training/Sustainment Training

When the new 76P10 soldier arrives at the unit of initial assignment, a long period of OJT begins, for this specialty has neither a Primary Technical Course (PTC) to impart journeyman (SL2) training nor a Basic Technical Course (BTC) for acquisition of master (SL3) skills. While sustaining apprentice skills through practice -- normally under supervision -- this specialist acquires a sufficient number of additional skills to accomplish 41 additional tasks before journeyman status is achieved. A Soldier's Manual and Trainer's Guide are used by the specialist and supervisor, respectively, along with the Job Book, to accomplish this training.

Masters Training

With no BTC to attend, the journeyman materiel control and accounting specialist continues acquiring skills and experience in the military work setting using the same training tools as before, in order to reach master

status. Technical supervisory skills are very important to a 76P30 soldier, and the SL3/4 Soldier's Manual is a valuable guide toward developing those skills.

The Army recognizes the importance of preparation for performance of 76P30 duties, and has designed a BTC of 10 weeks for implementation in FY85. The course will be taught at the Logistics Center at Ft. Lee, Virginia.

REPORT DOCUMENTATION PAGE

1a. REPORT SECURITY CLASSIFICATION Unclassified	1b. RESTRICTIVE MARKINGS AD-A168536
2a. SECURITY CLASSIFICATION AUTHORITY	3 DISTRIBUTION/AVAILABILITY OF REPORT Approved for public release; distribution unlimited
2b. DECLASSIFICATION/DOWNGRADING SCHEDULE	
4. PERFORMING ORGANIZATION REPORT NUMBER(S) LMI Task RA401 Working Note - 1	5. MONITORING ORGANIZATION REPORT NUMBER(S)
6a. NAME OF PERFORMING ORGANIZATION Logistics Management Institute 6b. OFFICE SYMBOL (If applicable)	7a. NAME OF MONITORING ORGANIZATION
6c. ADDRESS (City, State, and ZIP Code) 6400 Goldsboro Road Bethesda, MD 20817-5886	7b. ADDRESS (City, State, and ZIP Code)
8a. NAME OF FUNDING/SPONSORING ORGANIZATION ASD (Reserve Affairs) 8b. OFFICE SYMBOL (If applicable)	9. PROCUREMENT INSTRUMENT IDENTIFICATION NUMBER MDA903-85-C-0139
8c. ADDRESS (City, State, and ZIP Code) Washington, D.C. 20301	10. SOURCE OF FUNDING NUMBERS PROGRAM ELEMENT NO. / PROJECT NO. / TASK NO. / WORK UNIT ACCESSION NO

11. TITLE (Include Security Classification)

Technical Skill Training in the Army Reserve Components (Unclassified)

12. PERSONAL AUTHOR(S)
Edward D. Simms, Jr.; Dayton S. Pickett

13a. TYPE OF REPORT	13b. TIME COVERED	14. DATE OF REPORT (Year, Month, Day)	15 PAGE COUNT
Working Note	FROM _____ TO _____	September 1984	115

16. SUPPLEMENTARY NOTATION

17. COSATI CODES			18. SUBJECT TERMS (Continue on reverse if necessary and identify by block number)
FIELD	GROUP	SUB-GROUP	Reserve Components, Training, Logistics Skills, Total Force

19. ABSTRACT (Continue on reverse if necessary and identify by block number)

This working note describes the current Army system designed to build and sustain technical logistics skills in the Army National Guard (ARNG) and the United States Army Reserve (USAR). Our earlier efforts found that Reserve Component nondivisional logistics units in the corps rear area and the communications zone are critical to all operations involving Army combat forces. Of the Army nondivisional supply, maintenance, and transportation units deploying in the early days of a European war, over 80 percent are Reserve Component units. The purpose of this current review is to determine whether the policies and programs which support technical skill training for the Reserve Components are suitable and adequate.

20. DISTRIBUTION/AVAILABILITY OF ABSTRACT ☒ UNCLASSIFIED/UNLIMITED ☐ SAME AS RPT. ☐ DTIC USERS	21. ABSTRACT SECURITY CLASSIFICATION
22a. NAME OF RESPONSIBLE INDIVIDUAL	22b. TELEPHONE (Include Area Code) / 22c. OFFICE SYMBOL

END

DTIC

7-86